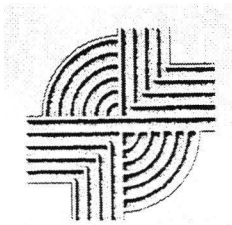
CULTURAL RESOURCES SURVEY OF THE JOHNSONVILLE INDUSTRIAL PARK, FLORENCE COUNTY, SOUTH CAROLINA

Prepared By:
Michael Trinkley, Ph.D., RPA
and
Nicole Southerland

Prepared For:
Mr. John Reynolds
Hayes, Seay, Mattern & Mattern, Inc.
181 East Evans Street Suite 23
BTC-105
Florence, South Carolina 29506

CHICORA RESEARCH CONTRIBUTION 327



Chicora Foundation, Inc.
PO Box 8664
Columbia, SC 29202-8664
803/787-6910
Email: chicora@bellsouth.net
www.chicora.org

April 17, 2001

ABSTRACT

This study reports on an intensive archaeological survey of 150 acres in the southeastern portion of Florence County, South Carolina. The work was conducted to assist Hayes, Seay, Mattern & Mattern, Inc. (HSMM)comply with Section 106 of the National Historic Preservation Act and the regulations codified in 36CFR800.

The tract, roughly triangular in shape, is to be used by Florence County for the construction of an Industrial Park. The survey area situated in east Johnsonville between S-121 (Possum Fork Road) and S-120 (Persimmon Ford Road). It consists of dense forests of pine and hardwood mixed with wetland areas in approximately three-fourths of the tract while cultivated fields make up about one-quarter of the area to the west. The 150 acre tract is located in a depressional area, creating many wetlands and wet areas throughout.

The eastern and western halves of the tract are divided by a power line which runs north to south. This 100 foot wide area collected standing water in most parts during the survey. The western portion of the survey area from the where S-120 and S-121 meet, is relatively level with dense woods in the extreme west converging into cultivated fields. The eastern portion of the tract is also relatively level with wetlands in the northeast portion of the area and general low, wet areas throughout the rest of the eastern half. There were also wetlands in the southwestern part of the survey area in a dense wooded area south of the fields.

This survey was conducted to identify and assess archaeological and historical sites which may be in the project domain. For this study an area of potential effect (APE) 1.0 mile around the proposed tract was assumed. The proposed undertaking will require clearing, grubbing, and grading, along with the construction of both underground utilities as well as industrial structures. There will likely be short-term construction impacts, including increased noise and dust levels, and increased construction related traffic. The long-term affects will primarily by limited to the study tract itself, although there is potential for visual intrusion of nearby historic properties.

Consultation with the S.C. Department of Archives and History revealed no National Register properties in the APE, but 14 historical architectural sites were identified from a 1982 reconnaissance survey of Florence County performed by the State Historic Preservation Office. An investigation of the archaeological site files at the S.C. Institute of Archaeology and Anthropology identified no other archaeological sites within the APE.

The archaeological survey of the tract incorporated shovel testing at 100-foot intervals on transects laid out at 100-foot intervals. All shovel test fill was screened through ¼-inch mesh and the shovel tests were backfilled at the completion of the study. The tests which produced mud were not screened, but visually scanned for artifacts. In the wetland areas with standing water, no shovel tests were performed, but a pedestrian survey was still completed. A total of 650 shovel tests were excavated along 36 transect lines.

As a result of these investigations, one historical domestic and agricultural site, 38FL382, was discovered. This site lacks integrity and contains an array of modern, post-1970 debris. The site is recommended not eligible for inclusion on the National Register and no additional management activity is recommended pending the review of the State Historic Preservation Office and the lead federal agency.

A survey of public roads within a mile of the proposed undertaking was conducted in an effort to identify any architectural sites over 50 years old which also retained their integrity. This survey focused on the previous Archives and History reconnaissance study, re-

examining sites identified by that study as deserving further attention. Of the 14 structures identified in 1982, only six were still present which exhibited some degree of integrity (2580054 through 2580059). None of these sites are recommended eligible, primarily because of extensive modifications or lack of architectural merit. All of these sites are several thousand feet from the proposed industrial tract and it is unlikely that their settings would be compromised by any activities on the study site.

It is possible that more archaeological remains may be encountered in the corridor during construction. Construction crews should be advised to report any discoveries of concentrations of artifacts (such as bottles, ceramics, or projectile points) or brick rubble to the project engineer, who should in turn report the material to the State Historic Preservation Office or to Chicora Foundation (the process of dealing with late discoveries is discussed in 36CFR800.13(b)(3)). No construction should take place in the vicinity of these late discoveries until they have been examined by an archaeologist and, if necessary, have been processed according to 36CFR800.13(b)(3).

TABLE OF CONTENTS

List of Figures iv

List of Tables iv

Introduction 1

Natural Environment 5
- *Physiography* 5
- *Geology and Soils* 6
- *Climate* 7
- *Floristics* 8

Prehistoric and Historic Synopsis 11
- *Prehistoric Overview* 11
- *Historic Synopsis* 17

Research Methods and Findings 25
- *Field Methods* 25
- *Architectural Survey* 26
- *Site Evaluation* 26
- *Laboratory Analysis* 28

Results 31
- *Introduction* 31
- *Identified Archaeological Sites* 31
- *Historic and Architectural Resources* 30

Summary and Recommendations 37

Sources Cited 39

LIST OF FIGURES

Figure
1. Project vicinity in Florence County 2
2. Project tract using USGS Johnsonville 7.5' 3
3. View of wetlands in project area 5
4. View of cultivated fields in project area 6
5. View of wooded area within survey tract 8
6. Generalized cultural periods for South Carolina 12
7. Portion of Mouzon's 1775 *An Accurate Map of North Carolina and South Carolina* 18
8. Portion of Mills' *Atlas* showing survey area 19
9. Portion of the 1939 *General Highway and Transportation Map* showing the study area 23
10. View of powerline corridor with transects 25
11. Transects in the study tract 26
12. Architectural sites identified by the 1985 reconnaissance study 28
13. Cultural resources identified during the survey 32
14. Sketch map of 38FL382 33
15. View of concrete slab and tin roofing 34
16. Hipped roof structure with two front gables 35
17. One part commercial block with canted bay 35
18. Johnsonville Masonic Lodge 36

LIST OF TABLES

Table
1. Systems of tenure 22

INTRODUCTION

This intensive archaeological survey of the 150 acre tract being considered by Hayes, Seay, Mattern & Mattern, Inc. (HSMM) in Florence County was conducted by Dr. Michael Trinkley of Chicora Foundation, Inc. for Mr. John Reynolds of HSMM and is intended HSMM and their client, Florence County, comply with Section 106 of the National Historic Preservation Act and the regulations codified in 36CFR800.

The project site consists of a tract measuring about 150 acres, situated in southeastern Florence County, just of the town of Johnsonville, off S-341 (Figure 1). The project site consists of a roughly triangular parcel measuring about 5,000 feet on its north edge, which borders S-121 (Possum Fork Road), 4,500 feet along the southwest side which borders S-120 (Persimmon Ford Road), and 4,000 feet on the eastern property line which is marked by a ditch and fence (Figure 2). A South Carolina Public Service Transmission Line runs north-south through the middle of the property. A small house is located in the western portion of the tract on Persimmon Ford Road.

The survey area is situated on generally level land, although there are depressional areas which frequently gather standing water. The areas to the northeast and southwest of the property are wetlands and the majority of the rest of the survey area produced wet areas or muddy shovel tests. The forested area is a dense second growth of pine and mixed hardwoods with modern to dense underbrush. Approximately one-forth of the survey area is cultivated fields which now, due to the season, lay fallow. The eastern part of the fields, closer to the dense forest, contained standing water, but the western portion of the fields produced drier land. The nearest permanent water is the Lynches River, located nearly a mile north of the property.

The survey area, as previously mentioned, is intended to be used as a location for an industrial park. Landscape alteration, primarily clearing, grubbing, and grading, as well as the actual construction of underground utilities (such as storm water drainage), and the construction of parking areas and industrial center, will cause severe damage to the ground surface and any archaeological resources which may be present in the survey area.

Construction, operation, and maintenance of the facility may also have an impact on historic resources in the project area. The project will not directly effect any historic structures (since none are located on the survey parcel), but the completed facility may detract from the visual integrity of historic properties, creating what many consider discordant surroundings. As a result, this architectural survey uses an area of potential effect (APE) about 1.0 mile radius around the proposed survey tract.

This study, however, does **not** consider any future secondary impact of the project, including increased or expanded industrial development.

We were requested by Mr. John Reynolds of HSMM to conduct a cultural resources survey of the tract in March 2001. These investigations incorporated a review of the site files at the South Carolina Institute of Archaeology and Anthropology. As a result of that work, no previously recorded sites were identified.

In addition, the master topographic maps at the South Carolina Department of Archives and History (SCDAH) were checked to locate any NRHP buildings, districts, structures, sites, or objects, or structures surveys in the study area. There are no NRHP properties, but 14 historical sites were found within the APE, previously identified by a SCDAH reconnaissance study in 1985.

Archival and historical research was limited to a review of secondary sources available in the Chicora Foundation files, as well as research at the South Caroliniana Library and the Thomas Cooper Map

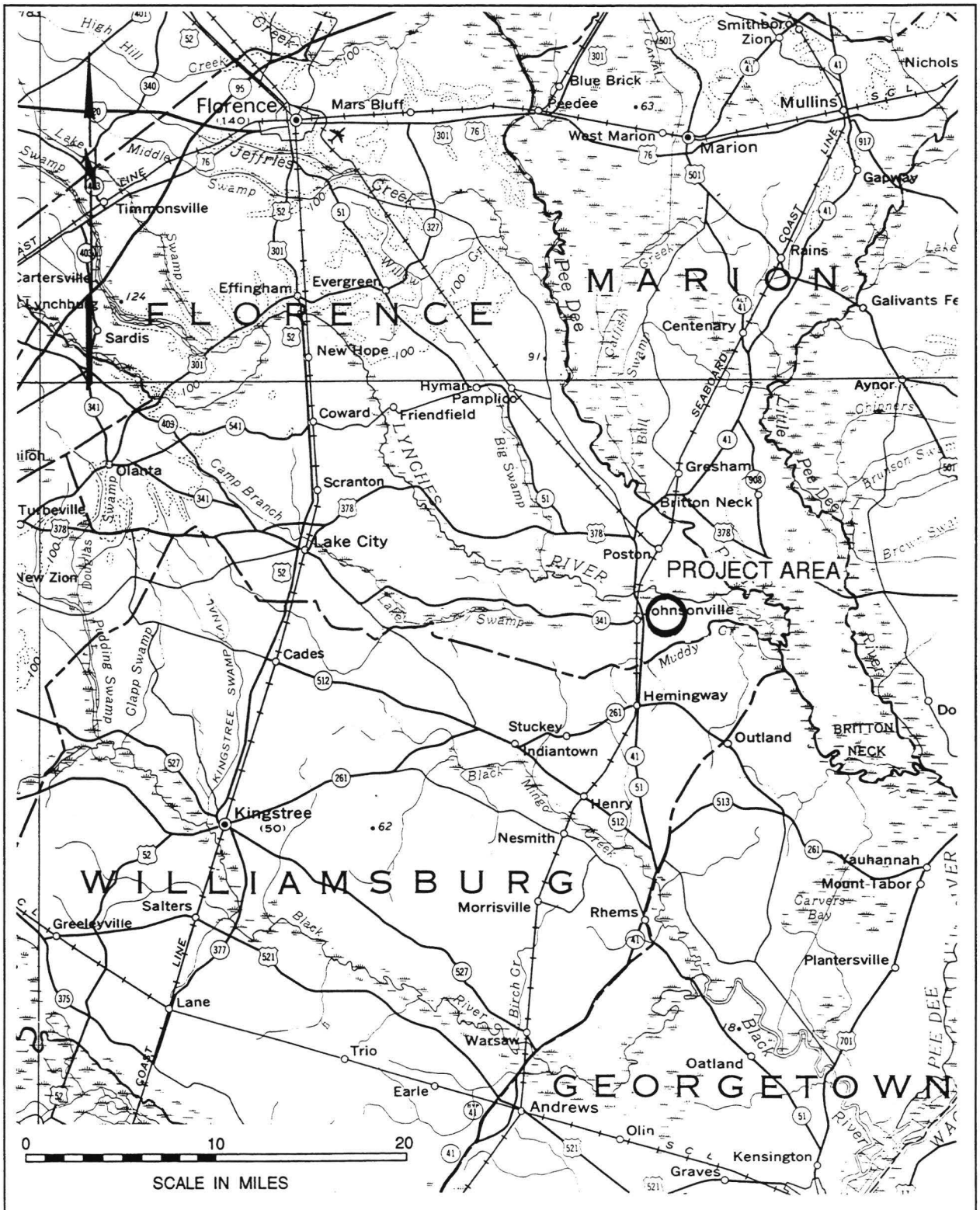


Figure 1. Project vicinity in Florence County (basemap is USGS South Carolina 1:500,000).

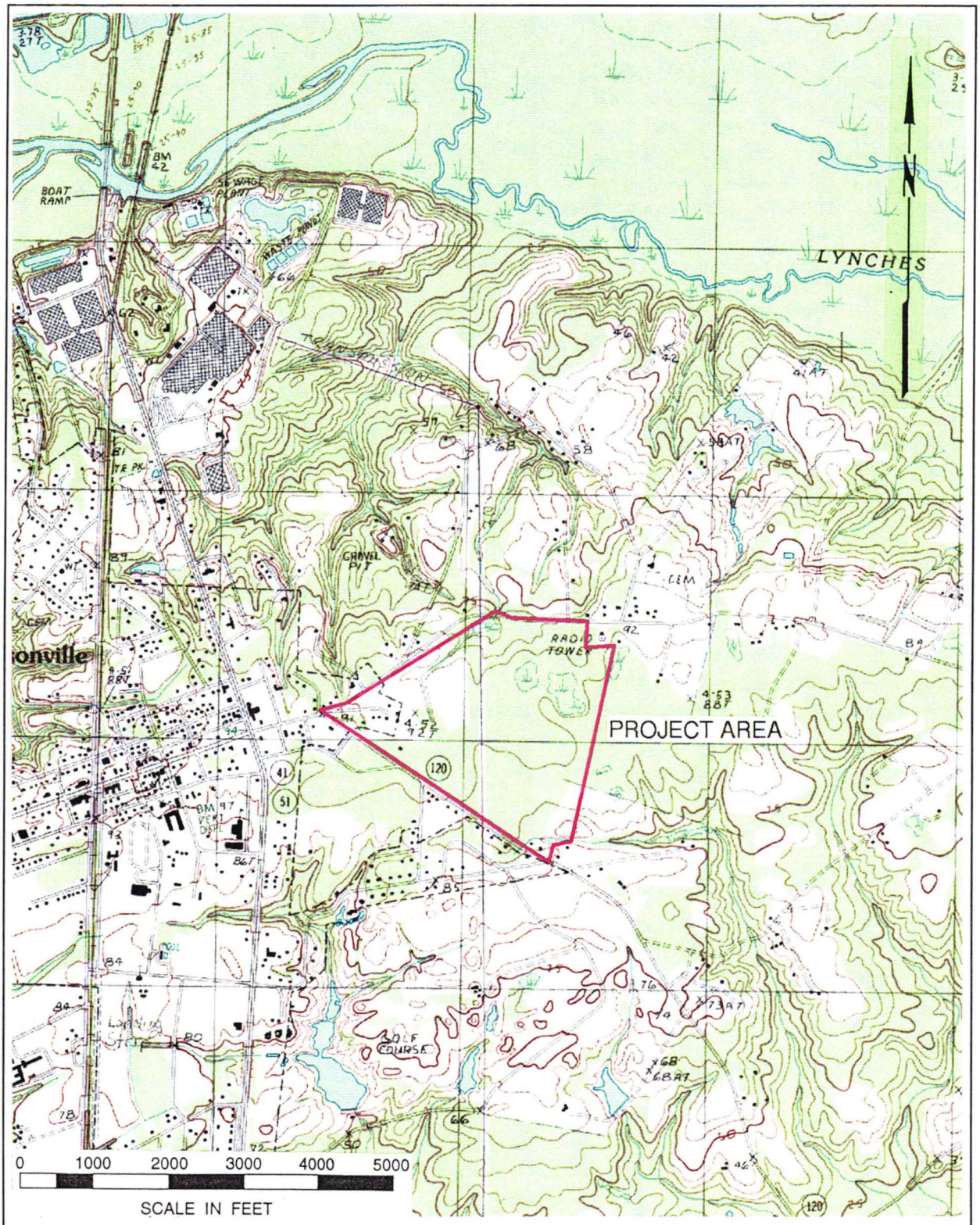


Figure 2. Project tract (basemap is USGS Johnsonville 7.5').

Repository.

The archaeological survey was conducted from March 22-28 and on April 2, 2001 by Ms. Nicole Southerland, Mr. Tom Covington, and Dr. Michael Trinkley. The survey revealed one previously unrecorded archaeological site, a twentieth century domestic and agricultural site, which is recommended not eligible for the National Register.

The architectural survey for this project, designed to assess the structures identified during the previous reconnaissance survey of the Johnsonville area, was conducted on March 23 by Dr. Michael Trinkley. As a result of this work six of the previously identified architectural sites were either no longer present or had been so altered as to no longer warrant recordation and evaluation. Six architectural sites, however, were identified as still possessing some degree of integrity and were recorded.

Laboratory work and report production were conducted at Chicora's laboratories in Columbia, South Carolina from April 9-11 by Ms. Debi Hacker. These collections will be curated with the S.C. Institute of Archaeology and Anthropology at the conclusion of this study.

ENVIRONMENTAL BACKGROUND

Physiography

Florence County is situated in the Inner and Middle Coastal Plain of South Carolina and is bounded to the north by Marlboro and Dillon counties, to the west by Darlington, Lee and Sumter counties, and the Lynches River, to the south by Clarendon and Williamsburg counties and to the east by the Pee Dee River, which separates it from Marion County. The land primarily consists of gently rolling hills with elevations ranging from about 20 feet above mean sea level in parts of the river floodplains to a high of about 150 feet above sea level in the Florence-Timmonsville area. Most of the county has an elevation between 70 and 150 feet above sea level (Pitts 1974:109).

The county is drained by the Pee Dee river system which flows in a southeasterly direction and forms somewhat of a dendritic drainage pattern. It includes Lynches River, which merges with the Pee Dee in the southeastern corner of the county, as well as smaller streams such as Claussen Creek, Jeffries Creek, and Muddy Creek. The closest water system to the survey area is the Lynches River about a mile to the north.

The survey tract is situated in the southeastern portion of Florence County — an area which is generally characterized by low, flatlands interspersed with small drainages, a few larger swamps, and numerous small bays.

The survey area is roughly triangular in shape with the north edge bordered by Possum Fork Road and the southwest edged by Persimmon Ford Road. The eastern property margin is shown by a drainage ditch and fence line . At one time, a radio tower was located just outside the northeastern corner of the survey area, but the tower had been removed prior to this survey.

The topography is relatively level with elevations ranging between 75 and 95 feet. The tract starts sloping down toward the northern portion, creating a very low area which was flooded throughout this survey. Several wetland areas also dominate the survey tract, namely in the southwestern and northeastern sections (Figure 3).

Figure 3. View of wetlands in the southwestern portion of the survey tract.

Often described as flatwoods, the region is characterized by broad flat areas, which consist of a few low ridges and bay depressions. The most common depressions in the Coastal Plain are Carolina bays, usually marshy and oval in shape (Richards 1950:45-46). Water depth varies from shallow lakes to areas with a preponderance of peat and herbaceous species (Barry 1980:131-13). Edmond Ruffin, a mid-nineteenth century observer, commented that these features provided good pasturage for cattle (Mathew 1992:210). Soils in such areas are generally poorly drained loamy sands and the typical vegetation is usually mesic or swampy, often characterized by bay trees.

Figure 4. View of cultivated fields in the survey area.

Geology and Soils

The geology is characteristic of the Coastal Plain. The parent materials of the soils are marine or fluvial deposits which consist of varying amounts of sands, silts, and clays. There are four primary geologic formations deposited at different periods during alternating transgression and recession of the ocean: the Duplin Marl Formation underlies parts of the southern and western portions of the county; the Black Creek Formation is found in the northern portion of the county (Park 1980).

Overlying these formations is a relatively thin mantle of undifferentiated light-colored sands and gravels with clay layers of Plio-Pleistocene age. The Pleistocene deposits include the Brandywine terrace (215 to 270 feet MSL), the Coharie terrace (170 to 215 feet MSL), the Sunderland terrace (100 to 170 feet MSL), the Penholoway terrace (42 to 70 feet MSL), the Talbot terrace (25 to 42 feet MSL), and the Pamlico terrace (less than 25 feet MSL) (Pitts 1974:109-110).

The project area is identified by two broad soil associations, both which dominate on nearly level soils on the lower part of the slopes. The Coxville-Norfolk-Lynchburg association consists of poorly drained soils with a loamy surface and clayey subsoil. These soils may either have a sandy surface layer and loamy subsurface which denotes a well-drained soil, or, more pertinent to this project area, poorly drained soils that are loamy throughout. The second soil association, the Olanta-Chipley association has moderately drained soils containing a sandy surface and loamy subsoil to poorly drained soils which are sandy throughout.

The fields (Figure 4) on the survey tract identified most with Goldsboro loamy sands. This

series consists of deep, moderately well drained soils which occur on nearly level areas of land. These have an Ap horizon of dark gray (10YR4/1) loamy sand to about 0.6 foot in depth with an A2 horizon of pale brown (10YR6/3) loamy sand. The B2 horizon contains a yellowish-brown (10YR5/4) sandy clay loam up to a depth of almost 2.0 feet. Once this soil is drained, it is ideal for growing such crops as tobacco, cotton, soybeans, small grains, and corn which is what was grown in these fields (Pitts 1974).

Chipley loamy sands were found most abundantly in the survey area, with the majority found in the wooded area of the southern portion of the tract. These soils are found on nearly level regions and consist of moderately well drained to poorly drained soils. The A1 horizon consists of a black (N2/0) loamy sand to 0.6 foot with an AC horizon of grayish brown (2.5Y5/2) loamy sand to a depth of 0.8 foot. The C1 horizon consists of a yellowish brown (10YR5/4) loamy sand to 1.3 foot.

A broad band of Wehadkee and Johnston soils are also found on the survey tract. These soils are poorly drained, forming in loamy and sandy alluvial sediments, which causes frequent flooding. In most cases, these soils occur in wooded areas along flood plains. The A1 horizon consists of a light brownish gray (10YR6/2) fine sandy loam to 0.6 foot over a C1g horizon of gray (10YR6/1) fine sandy loam which may occur up to a depth of 2.5 feet.

The northeastern corner of the survey area is dominated by Lakeland sands which occur on 0-6% slopes. These soils, which are excessively drained, have an Ap horizon of very dark grayish brown (10YR3/2) sand to a depth of 0.6 foot over a C1 horizon of yellowish brown (10YR5/4) sand occurring to a depth of 1.3 feet.

Also found on the survey tract, although less abundant, are Wagram sands and Lynchburg sandy loams. Wagram sands occur in strongly sloping areas, namely the northern most portion of the survey area. These soils consist of an Ap horizon of grayish brown (2.5Y5/2) sand to 0.6 foot over an A2 horizon of light yellowish brown (2.5Y6/4) fine sand which can be found to a depth of 2.2 feet. Lynchburg sandy loams are poorly drained soils found on nearly level plains. The A1 horizon consists of a very dark gray (10YR3/1) sandy loam to 0.4 foot and an A2 horizon of dark grayish brown (10YR4/2) find sandy loam to 0.9 foot. The B1 horizon has a pale brown (10YR6/3) fine sandy loam to a depth of 1.3 feet.

Mills commented that the swampland soils are composed of the "richest soil". He noted for nearby Marion District that "[w]hile the swamp lands reclaimed and secured from freshets, will bring 50 dollars an acre; and the oak and hickory lands 15 dollars an acre; the pine lands will scarcely sell for 1 dollar per acre" (Mills 1972:623 [1826]). The flatlands, "are, by comparison, sand barrens; yet occasionally presenting some good timber land" (Mills 1972:513 [1826]). And while the uplands were healthy, with summers free of disease, he observed that, "on the rivers, creeks, and flat lands, this district is subject to bilious fevers, and cannot be called healthy" (Mills 1972:515 [1826]). The products cultivated during that time were "cotton, corn, wheat, pease, and potatoes" (Mills 1972:623 [1826]).

Climate

The general climate of the Florence county area is characterized by mild humid conditions. This climate is influenced by the warm Gulf Stream, as well as by the Appalachian mountains which block the coldest air masses. Other factors include latitude, elevation, distance from the ocean, and location with respect to the average tracts of migratory cyclones. Day to day weather is controlled primarily by the movement of pressure systems across the nation. However, during the summer months there are few complete exchanges of air masses because tropical maritime air persists for extended periods (Pitts 1974:108).

The average annual precipitation in the Florence area is 44.5 inches and is unevenly distributed throughout the year, with 28.9 inches occurring from April through October which is the primary growing season (Pitts 1974:108).

The climate, according to Mills (1972:625 [1826]), "taking the whole year round, is pleasant." The annual average temperature in Florence is 63.2°F, and the average monthly temperature ranges from 44.8°F

in January to 80.3°F in July. Frozen precipitation occurs only one to three times a year during the winter season. The abundant supply of warm, moist and relatively unstable air produces frequent scattered showers and thunderstorms in the summer.

Figure 5. View of wooded area within the survey area.

Severe weather usually means violent thunderstorms, tornadoes, and hurricanes. The tropical storm season is in late summer and early fall, although storms may occur as early as May or as late as October (NOAA 1977). Heavy rains and high winds occur with tropical storms about once every six years. Storms of hurricane intensity are much more infrequent. Notable droughts have occurred twice in modern times; in 1925 and 1954. Typically a serious drought may occur once every fifty years. Less severe dry periods have occurred more often, normally in late spring or in autumn (Pitts 1974:109).

Floristics

The survey tract is a large area with several types of vegetation. It contains a mixture of coniferous and deciduous forests dominated by pines and broadleaf taxa such as upland oaks, sweetgum, hickories, and various understory species (Figure 5).

Even though several houses were located on the survey tract in the 1930s and 1940s, the brush has since grown to a dense forest making it difficult to navigate through the vegetation.

The wetland areas to the southwest and northeast contain gum, sycamore, water hickory, lowland oaks, soft maples, willows, and other herbaceous species.

In the early nineteenth century Mills observed that:

> the long leafed pine is most abundant of the forest trees; next the cypress, various kinds of oak, the hickory, tupilo &c. Of fruit trees the peach, apple, pear, plum,. &c. are common (Mills 1972:624 [1826]).

Mills also observed that the major use of these forest resources was construction, also noting that "good clay is found in various places, suitable to make brick" (Mills 1972:625 [1826]). Only lime, largely made of burnt shells, needed to be imported into the area (primarily from neighboring Georgetown). Mills encouraged the residents to make better use of their local "shell limestone" for lime, a suggestion which appears to have made little impact in the local economy (Mills 1972:628 [1826]).

Today, the project area is mostly wooded containing a moderately thick understory of plants including various shrubs, vines, and herbaceous species. Most common is poison ivy. The fields, while still being cultivated, were fallow at the time of the survey, so this area was clear and easily navigable. The thick brush thinned closer to the wetland areas, but vines dominated these areas.

PREHISTORIC AND HISTORIC SYNOPSIS

Prehistoric Overview

Overviews for South Carolina's prehistory, while of differing lengths and complexity, are available in virtually every compliance report prepared. There are, in addition, some "classic" sources well worth attention, such as Joffre Coe's *Formative Cultures* (Coe 1964), as well as some new general overviews (such as Sassaman et al. 1990 and Goodyear and Hanson 1989). Also extremely helpful, perhaps even essential, are a handful of recent local synthetic statements, such as that offered by Sassaman and Anderson (1994) for the Middle and Late Archaic and by Anderson et al. (1992) for the Paleoindian and Early Archaic. Only a few of the many sources are included in this study, but they should be adequate to give the reader a "feel" for the area and help establish a context for the various sites identified in the study areas. For those desiring a more general synthesis, perhaps the most readable and well balanced is that offered by Judith Bense (1994), *Archaeology of the Southeastern United States: Paleoindian to World War I*. Figure 6 offers a generalized view of South Carolina's cultural periods.

Paleoindian Period

The Paleoindian Period, most commonly dated from about 12,000 to 10,000 B.P., is evidenced by basally thinned, side-notch projectile points; fluted, lanceolate projectile points, side scrapers, end scrapers; and drills (Coe 1964; Michie 1977; Williams 1965). Oliver (1981, 1985) has proposed to extend the Paleoindian dating in the North Carolina Piedmont to perhaps as early as 14,000 B.P., incorporating the Hardaway Side-Notched and Palmer Corner-Notched types, usually accepted as Early Archaic, as representatives of the terminal phase. This view, verbally suggested by Coe for a number of years, has considerable technological appeal.[1] Oliver suggests a continuity from the Hardaway Blade through the Hardaway-Dalton to the Hardaway Side-Notched, eventually to the Palmer Side-Notched (Oliver 1985:199-200). While convincingly argued, this approach is not universally accepted.

The Paleoindian occupation, while widespread, does not appear to have been intensive. Artifacts are most frequently found along major river drainages, which Michie interprets to support the concept of an economy "oriented toward the exploitation of now extinct mega-fauna" (Michie 1977:124). Survey data for Paleoindian tools, most notably fluted points, is somewhat dated, but has been summarized by Charles and Michie 1992). They reveal a widespread distribution across the state (see also Anderson 1992b:Figure 5.1) with at least several concentrations relating to intensity of collector activity. What is clear is that points are found fairly far removed from the origin of the raw material. Charles and Michie suggest that this may "imply a geographically extensive settlement system" (Charles and Michie 1992:247).

Although data are sparse, one of the more attractive theories that explains the widespread distribution of Paleoindian sites is the model tracking the replacement of a high technology forager (or HTF) adaptation by a "progressively more generalized band/microband foraging adaption" accompanied by increasingly distinct regional traditions (perhaps

---

[1] While never discussed by Coe at length, he did observe that many of the Hardaway points, especially from the lowest contexts, had facial fluting or thinning which, "in cases where the side-notches or basal portions were missing, . . . could be mistaken for fluted points of the Paleo-Indian period" (Coe 1964:64). While not an especially strong statement, it does reveal the formation of the concept. Further insight is offered by Ward's (1983:63) all too brief comments on the more recent investigations at the Hardaway site (see also Daniel 1992).

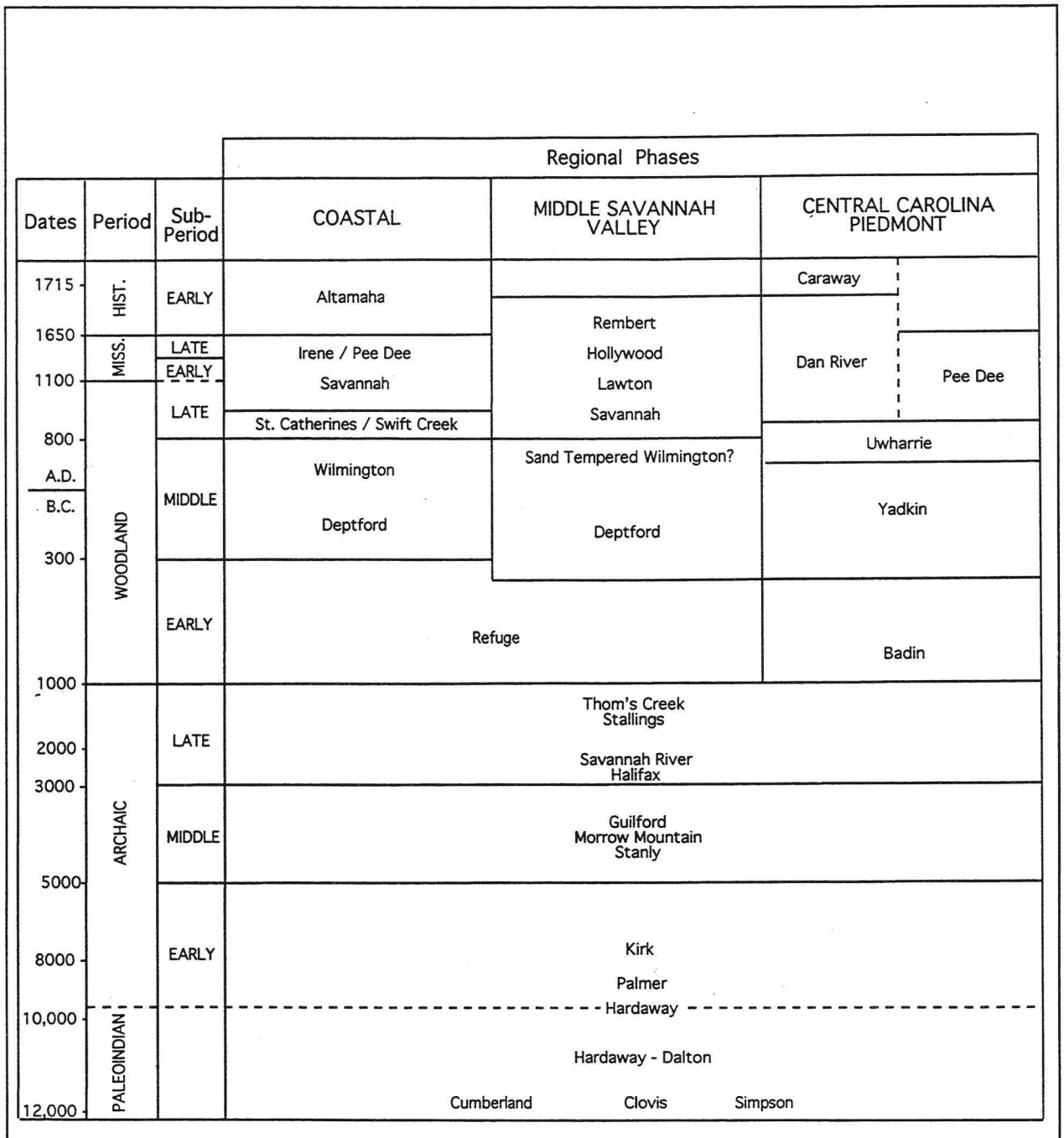


Figure 6. A generalized cultural sequence for South Carolina (partially adapted from Coe 1964:Figure 116).

reflecting movement either along or perhaps even between river drainages) (Anderson 1992b:46).

Distinctive projectile points include lanceolates such as Clovis, Dalton, perhaps the Hardaway, and Big Sandy (Coe 1964; Phelps 1983; Oliver 1985). A temporal sequence of Paleoindian projectile points was proposed by Williams (1965:24-51), but according to Phelps (1983:18) there is little stratigraphic or chronometric evidence for it. While this is certainly true, a number of authors, such as Anderson (1992a) and Oliver (1985) have assembled impressive data sets. We are inclined to believe that while often not conclusively proven by stratigraphic excavations (and such proof may be an unreasonable expectation), there is a large body of circumstantial evidence. The weight of this evidence tends to provide considerable support.

Unfortunately, relatively little is known about Paleoindian subsistence strategies, settlement systems, or social organization (see, however, Anderson 1992b for an excellent overview and synthesis of what is known). Generally, archaeologists agree that the Paleoindian groups were at a band level of society, were nomadic, and were both hunters and foragers. While population density, based on isolated finds, is thought to have been low, Walthall suggests that toward the end of the period, "there was an increase in population density and in territoriality and that a number of new resource areas were beginning to be exploited" (Walthall 1980:30).

Archaic Period

The Archaic Period, which dates from 10,000 to 3,000 B.P.[2], does not form a sharp break with the Paleoindian Period, but is a slow transition characterized by a modern climate and an increase in the diversity of material culture. Associated with this is a reliance on a broad spectrum of small mammals, although the white tailed deer was likely the most commonly exploited animal. Archaic period assemblages, exemplified by corner-notched and broad-stemmed projectile points, are fairly common, perhaps because the swamps and drainages offered especially attractive ecotones.

Many researchers have reported data suggestive of a noticeable population increase from the Paleoindian into the Early Archaic. This has tentatively been associated with a greater emphasis on foraging. Diagnostic Early Archaic artifacts include the Kirk Corner Notched point. As previously discussed, Palmer points may be included with either the Paleoindian or Archaic period, depending on theoretical perspective. As the climate became hotter and drier than the previous Paleoindian period, resulting in vegetational changes, it also affected settlement patterning as evidenced by a long-term Kirk phase midden deposit at the Hardaway site (Coe 1964:60). This is believed to have been the result of a change in subsistence strategies.

Settlements during the Early Archaic suggest the presence of a few very large, and apparently intensively occupied, sites which can best be considered base camps. Hardaway might be one such site. In addition, there were numerous small sites which produce only a few artifacts — these are the "network of tracks" mentioned by Ward (1983:65). The base camps produce a wide range of artifact types and raw materials

[2] The terminal point for the Archaic is no clearer than that for the Paleoindian and many researchers suggest a terminal date of 4,000 B.P. rather than 3,000 B.P. There is also the question of whether ceramics, such as the fiber-tempered Stallings ware, will be included as Archaic, or will be included with the Woodland. Oliver, for example, argues that the inclusion of ceramics with Late Archaic attributes "complicates and confuses classification and interpretation needlessly" (Oliver 1981:20). He comments that according to the original definition of the Archaic, it "represents a preceramic horizon" and that "the presence of ceramics provides a convenient marker for separation of the Archaic and Woodland periods (Oliver 1981:21). Others would counter that such an approach ignores cultural continuity and forces an artificial, and perhaps unrealistic, separation. Sassaman and Anderson (1994:38-44), for example, include Stallings and Thom's Creek wares in their discussion of "Late Archaic Pottery." While this issue has been of considerable importance along the Carolina and Georgia coasts, it has never affected the Piedmont, which seems to have embraced pottery far later, well into the conventional Woodland period. The importance of the issue in the Sandhills, unfortunately, is not well known.

which has suggested to many researchers long-term, perhaps seasonal or multi-seasonal, occupation. In contrast, the smaller sites are thought of as special purpose or foraging sites (see Ward 1983:67).

Middle Archaic (8,000 to 6,000 B.P.) diagnostic artifacts include Morrow Mountain, Guilford, Stanly and Halifax projectile points. Much of our best information on the Middle Archaic comes from sites investigated west of the Appalachian Mountains, such as the work by Jeff Chapman and his students in the Little Tennessee River Valley (for a general overview see Chapman 1977, 1985a, 1985b). There is good evidence that Middle Archaic lithic technologies changed dramatically. End scrapers, at times associated with Paleoindian traditions, are discontinued, raw materials tend to reflect the greater use of locally available materials, and mortars are initially introduced. Associated with these technological changes there seem to also be some significant cultural modifications. Prepared burials begin to more commonly occur and storage pits are identified. The work at Middle Archaic river valley sites, with their evidence of a diverse floral and faunal subsistence base, seems to stand in stark contrast to Caldwell's Middle Archaic "Old Quartz Industry" of Georgia and the Carolinas, where axes, choppers, and ground and polished stone tools are very rare.

Among the most common of all Middle Woodland artifacts is the Morrow Mountain Stemmed projectile point. Originally divided into two varieties by Coe (1964:37,43) based primarily on the size of the blade and the stem, Morrow Mountain I points had relatively small triangular blades with short, pointed stems. Morrow Mountain II points had longer, narrower blades with long, tapered stems. Coe suggested a temporal sequence from Morrow Mountain I to Morrow Mountain II. While this has been rejected by some archaeologists, who suggest that the differences are entirely related to the life-stage of the point, the debate is far from settled and Coe has considerable support for his scenario.

The Morrow Mountain point is also important in our discussions since it represents a departure from the Carolina Stemmed Tradition. Coe has suggested that the groups responsible for the Middle Archaic Morrow Mountain (and the later Guilford points) were intrusive ("without any background" in Coe's words) into the North Carolina Piedmont, from the west, and were contemporaneous with the groups producing Stanly points (Coe 1964:122-123; see also Phelps 1983:23). Phelps, building on Coe, refers to the Morrow Mountain and Guilford as the "Western Intrusive horizon." Sassaman (1995) has recently proposed a scenario for the Morrow Mountain groups which would support this west-to-east time-transgressive process. Abbott and his colleagues, perhaps unaware of Sassaman's data, dismiss the concept, commenting that the shear distribution and number of these points "makes this position wholly untenable" (Abbott et al. 1995:9).

The controversy surrounding Morrow Mountain also includes its posited date range. Coe (1964:123) did not expect the Morrow Mountain to predate 6500 B.P., yet more recent research in Tennessee reveals a date range of about 7500 to 6500 B.P. Sassaman and Anderson (1994:24) observe that the South Carolina dates have never matched the antiquity of their more western counterparts and suggest continuation to perhaps as late as 5500 B.P. In fact they suggest that even later dates are possible since it can often be difficult to separate Morrow Mountain and Guilford points.

A recently defined point is the MALA. The term is an acronym standing for Middle Archaic and Late Archaic, the strata in which these points were first encountered at the Pen Point site (38BR383) in Barnwell County, South Carolina (Sassaman 1985). These stemmed and notched lanceolate points were originally found in a context suggesting a single-episode event with variation not based on temporal variation. The original discussion was explicitly worded to avoid application of a typology, although as Sassaman and Anderson (1994:27) note, the "type" has spread into more common usage. There are possible connections with both the Halifax points of North Carolina and the Benton points of the middle Tennessee River valley, while the "heartland" for the MALA appears confined to the lower middle Coastal Plain of South Carolina.

The available information has resulted in a variety of competing settlement models. Some argue for

increased sedentism and a reduction of mobility (see Goodyear et al. 1979:111). Ward argues that the most appropriate model is one which includes relatively stable and sedentary hunters and gatherers "primarily adapted to the varied and rich resource base offered by the major alluvial valleys" (Ward 1983:69). While he recognizes the presence of "inter-riverine" sites, he discounts explanations which focus on seasonal rounds, suggesting "alternative explanations . . . [including] a wide range of adaptive responses." Most importantly, he notes that:

> the seasonal transhumance model and the sedentary model are opposite ends of a continuum, and in all likelihood variations on these two themes probably existed in different regions at different times throughout the Archaic period (Ward 1983:69).

Others suggest increased mobility during the Archaic (see Cable 1982). Sassaman (1983) has suggested that the Morrow Mountain phase people had a great deal of residential mobility, based on the variety of environmental zones they are found in and the lack of site diversity. The high level of mobility, coupled with the rapid replacement of these points, may help explain the seemingly large numbers of sites with Middle Archaic assemblages. Curiously, the later Guilford phase sites are not as widely distributed, perhaps suggesting that only certain micro-environments were used (cf. Ward [1983:68-69] who would likely reject the notion that substantially different environmental zones are, in fact, represented).

Recently Abbott et al. argue for a combination of these models, noting that the almost certain increase in population levels probably resulted in a contraction of local territories. With small territories there would have been significantly greater pressure to successfully exploit the limited resources by more frequent movement of camps. They discount the idea that these territories could have been exploited from a single base camp without horticultural technology. Abbott and his colleagues conclude, "increased residential mobility under such conditions may in fact represent a common stage in the development of sedentism" (Abbott et al. 1995:9).

From excavations at a Sandhills site in Chesterfield County, South Carolina, Gunn and his colleague (Gunn and Wilson 1993) offer an alternative model for Middle Archaic settlement. He accepts that the uplands were desiccated from global warming, but rather than limiting occupation, this environmental change made the area more attractive for residential base camps. Gunn and Wilson suggest that the open, or fringe, habitat of the upland margins would have been attractive to a wide variety of plant and animal species.

The Late Archaic, usually dated from 6,000 to 3,000 or 4,000 B.P., is characterized by the appearance of large, square stemmed Savannah River projectile points (Coe 1964). These people continued to intensively exploit the uplands much like earlier Archaic groups with the bulk of our data for this period coming from the Uwharrie region in North Carolina.

One of the more debated issues of the Late Archaic is the typology of the Savannah River Stemmed and its various diminutive forms. Oliver, refining Coe's (1964) original Savannah River Stemmed type and a small variant from Gaston (South 1959:153-157), developed a complete sequence of stemmed points that decrease uniformly in size through time (Oliver 1981, 1985). Specifically, he sees the progression from Savannah River Stemmed to Small Savannah River Stemmed to Gypsy Stemmed to Swannanoa from about 5000 B.P. to about 1,500 B.P. He also notes that the latter two forms are associated with Woodland pottery.

This reconstruction is still debated with a number of archaeologists expressing concern with what they see as typological overlap and ambiguity. They point to a dearth of radiocarbon dates and good excavation contexts at the same time they express concern with the application of this typology outside the North Carolina Piedmont (see, for a synopsis, Sassaman and Anderson 1990:158-162, 1994:35).

In addition to the presence of Savannah River points, the Late Archaic also witnessed the introduction of steatite vessels (see Coe 1964:112-113; Sassaman 1993), polished and pecked stone artifacts, and grinding stones. Some also include the introduction of fiber-tempered pottery about 4000 B.P. in the Late Archaic (for a discussion see Sassaman and Anderson 1994:38-

44). This innovation is of special importance along the Georgia and South Carolina coasts, but seems to have had only minimal impact in the uplands of South or North Carolina.

There is evidence that during the Late Archaic the climate began to approximate modern climatic conditions. Rainfall increased resulting in a more lush vegetation pattern. The pollen record indicates an increase in pine which reduced the oak-hickory nut masts which previously were so widespread. This change probably affected settlement patterning since nut masts were now more isolated and concentrated. From research in the Savannah River valley near Aiken, South Carolina, Sassaman has found considerable diversity in Late Archaic site types with sites occurring in virtually every upland environmental zone. He suggests that this more complex settlement pattern evolved from an increasingly complex socio-economic system. While it is unlikely that this model can be simply transferred to the Sandhills of South Carolina without an extensive review of site data and micro-environmental data, it does demonstrate one approach to understanding the transition from Archaic to Woodland.

Woodland Period

As previously discussed, there are those who see the Woodland beginning with the introduction of pottery. Under this scenario the Early Woodland may begin as early as 4,500 B.P. and continued to about 2,300 B.P. Diagnostics would include the small variety of the Late Archaic Savannah River Stemmed point (Oliver 1985) and pottery of the Stallings and Thoms Creek series. These sand tempered Thoms Creek wares are decorated using punctations, jab-and-drag, and incised designs (Trinkley 1976). Also potentially included are Refuge wares, also characterized by sandy paste, but often having only a plain or dentate-stamped surface (Waring 1968). Others would have the Woodland beginning about 3,000 B.P. and perhaps as late as 2,500 B.P. with the introduction of pottery which is cord-marked or fabric-impressed and suggestive of influences from northern cultures.

There remains, in South Carolina, considerable ambiguity regarding the pottery series found in the Sandhills and their association with coastal plain and piedmont types. The earliest pottery found at many sites may be called either Deptford or Yadkin, depending on the research or their inclination at any given moment.

The Deptford phase, which dates from 3050 to 1350 B.P., is best characterized by fine to coarse sandy paste pottery with a check stamped surface treatment. The Deptford settlement pattern involves both coastal and inland sites.

Inland sites such as 38AK228-W, 38LX5, 38RD60, and 38BM40 indicate the presence of an extensive Deptford occupation on the Fall Line and the Inner Coastal Plain/Sand Hills, although sandy, acidic soils preclude statements on the subsistence base (Anderson 1979; Ryan 1972; Trinkley 1980). These interior or upland Deptford sites, however, are strongly associated with the swamp terrace edge, and this environment is productive not only in nut masts, but also in large mammals such as deer. Perhaps the best data concerning Deptford "base camps" comes from the Lewis-West site (38AK228-W), where evidence of abundant food remains, storage pit features, elaborate material culture, mortuary behavior, and craft specialization has been reported (Sassaman et al. 1990:96-98; see also Sassaman 1993 for similar data recovered from 38AK157).

Further to the north and west, in the Piedmont, the Early Woodland is marked by a pottery type defined by Coe (1964:27-29) as Badin.[3] This pottery is identified as having very fine sand in the paste with an occasional pebble. Coe identified cord-marked, fabric-marked, net-impressed, and plain surface finishes. Beyond this pottery little is known about the makers of the Badin wares and relatively few of these sherds are reported from South Carolina sites.

[3] The ceramics suggest clear regional differences during the Woodland which seem to only be magnified during the later phases. Ward (1983:71), for example, notes that there are "marked distinctions" between the pottery from the Buggs Island and Gaston Reservoirs and that from the south-central Piedmont.

On the Coastal Plain of South Carolina, researchers are finding evidence of a Middle Woodland Yadkin assemblage, best known from Coe's work at the Doerschuk site in North Carolina (Coe 1964:25-26). Yadkin pottery is characterized by a crushed quartz temper and cord marked, fabric impressed, and linear check stamped surface treatments. The Yadkin ceramics are associated with medium-sized triangular points, although Oliver (1981) suggests that a continuation of the Piedmont Stemmed Tradition to at least A.D. 300 coexisted with this Triangular Tradition. The Yadkin series in South Carolina was first observed by Ward (1978, 1983) from the White's Creek drainage in Marlboro County, South Carolina. Since then, a large Yadkin village has been identified by DePratter at the Dunlap site (38DA66) in Darlington County, South Carolina (Chester DePratter, personal communication 1985) and Blanton et al. (1986) have excavated a small Yadkin site (38SU83) in Sumter County, South Carolina. Research at 38FL249 on the Roche Carolina tract in northern Florence County revealed an assemblage including Badin, Yadkin, and Wilmington wares (Trinkley et al. 1993:85-102). Anderson et al. (1982:299-302) offer additional typological assessments of the Yadkin wares in South Carolina.

Over the years the suggestion that Cape Fear might be replaced by such types as Deep Creek and Mount Pleasant has raised considerable controversy. Taylor, for example, rejects the use of the North Carolina types in favor of those developed by Anderson et al. (1982) from their work at Mattassee Lake in Berkeley County (Taylor 1984:80). Cable (1991) is even less generous in his denouncement of ceramic constructs developed nearly a decade ago, also favoring adoption of the Mattassee Lake typology and chronology. This construct, recognizing five phases (Deptford I - III, McClellanville, and Santee I), uses a type variety system.

Regardless of terminology, these Middle Woodland Coastal Plain and Coastal Zone phases continue the Early Woodland Deptford pattern of mobility. While sites are found all along the coast and inland to the Fall Line, shell midden sites evidence sparse shell and artifacts. Gone are the abundant shell tools, worked bone items, and clay balls. Recent investigations at Coastal Zone sites such as 38BU747 and 38BU1214, however, have provided some evidence of worked bone and shell items at Deptford phase middens (see Trinkley 1990).

In some respects the Late Woodland (1,200 B.P. to 400 B.P.) may be characterized as a continuation of previous Middle Woodland cultural assemblages. While outside the Carolinas there were major cultural changes, such as the continued development and elaboration of agriculture, the Carolina groups settled into a lifeway not appreciably different from that observed for the previous 500-700 years. From the vantage point of the Middle Savannah Valley Sassaman and his colleagues note that, "the Late Woodland is difficult to delineate typologically from its antecedent or from the subsequent Mississippian period" (Sassaman et al. 1990:14). This situation would remain unchanged until the development of the South Appalachian Mississippian complex (see Ferguson 1971).

Historical Synopsis

While the English settled Charleston in 1670, the northern frontier was ignored, except for Indian trade, until 1731, when the first Royal Governor of Carolina, Robert Johnson, directed 11 townships be laid out on the banks of various rivers, including one on the Black River. The settling of Georgetown (with its port of entry), however, greatly assisted in the population of the Williamsburg area. By 1734 the Carolina frontier was being divided into parishes, with the Williamsburg vicinity becoming part of Prince Frederick's Parish (Boddie 1923:9). Prior to that the area was primarily settled by Scotch-Irish, although much of the land was acquired by large planters speculating on the value of the newly opened land.

By 1737 surveys in the region had about ceased as there seemed to be no additional land suitable for cultivation remaining in the township and the population held steady at about 500 individuals (Wallace 1951:151). Boddie notes that John Witherspoon was one of the first settlers in the Boggy Swamp region, just north of Indiantown, about 11 miles northwest of the survey area. In addition, there were a number of English settling in the Black River area (Boddie 1923:30, 33). The tenor of these early

settlers was described by Boddie:

> The deepest desire of every one of the original settlers, who came to Williamsburg, was to be let alone by everybody and by everything, from his nearest neighbor to the King of England (Boddie 1923:37).

Initially the settlement was built on subsistence farming, with a focus on corn when wheat proved unsatisfactory. Coupled with this was cattle grazing, which required little capital investment, but a reasonably good return(Boddie 1923:40). As was the case in other frontier areas, indigo was eventually found to be more profitable than herding (Starr 1983), although the two were not mutually exclusive. As Boddie observes, "cattle made Williamsburg substantial; indigo made it rich" (Boddie 1923:90).

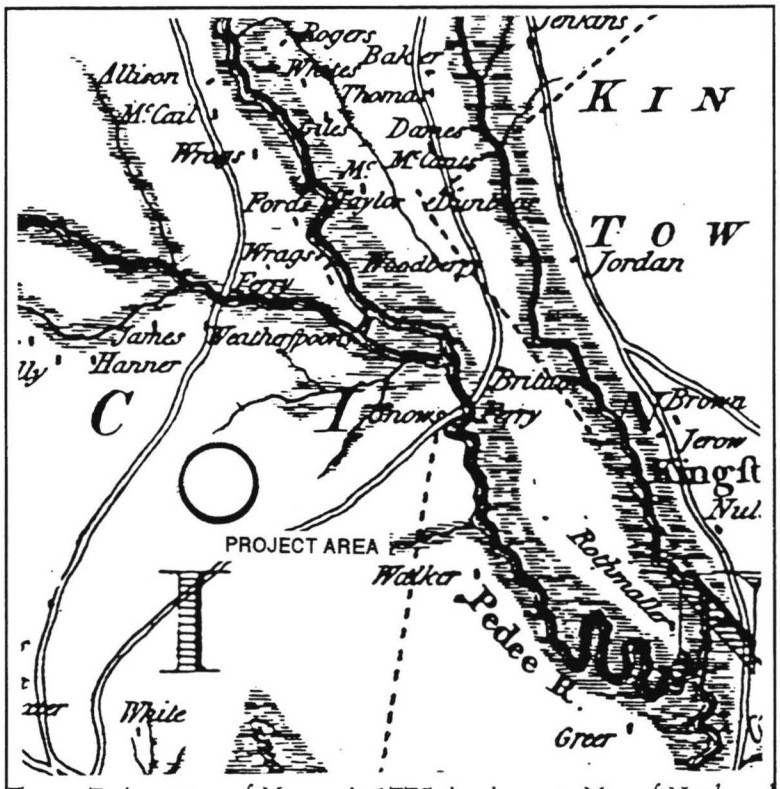


Figure 7. A portion of Mouzon's 1775 *An Accurate Map of North and South Carolina*, showing the vicinity south of the Lynches River.

The indigo industry flourished in South Carolina because of its unusual advantages — an indirect bounty, a protective tariff, and a monopoly on the British market during the various wars which cut off access to the better Spanish and French indigo supplies (Sharrer 1971). Carolina indigo was typically of middling or poor quality, yet it brought high prices since nothing else was available. When it had to compete with other sources, its price fell — thus the Carolina love affair with indigo ran hot and cold. Nevertheless, it provided a cash crop which required only modest numbers of slaves — and was embraced by the Williamsburg farmers. Although accounts are not clear, it seems that by the end of the first half of the eighteenth century slavery was well established, even if most families owned five or fewer African Americans (Boddie 1923:87).

Mouzon's 1775 map (Figure 7) reveals that a ferry was already present along the Lynches River, on a road which ran from the Black Mingo northward across Lynches River and then on the west bank of the "Great Pedee River." Although Mouzon provides no name for the ferry, Witherspoon is located only a short distance south along the road leading to the crossing and there is no other nearby residence.

Prior to American Revolution Boddie would have us believe that Williamsburg was idyllic:

> Its doors were never locked and its windows were never barred. Its cornfields produced abundantly and its meadows were overflowing with cattle. Indigo ran riot so that cleared acres could not contain it. Tobacco and flax flourished wherever their seeds were sown. Roses bloomed and geraniums grew about the doorways. Morning suns came fresh out of the sea and evening showers brought peace to the troubled sands (Boddie 1923:94).

And the sands were, indeed, troubled. While Williamsburg may have been on the periphery of the economic and social turmoil, revolution was brewing. By December 1779, when Henry Clinton led an expeditionary force from New York to occupy Charleston, the war shifted from the Northern colonies to the South. In 1780 a 300 man battalion was raised in the area by Colonial John James and command was later assumed by General Francis Marion (Boddie 1923:98).

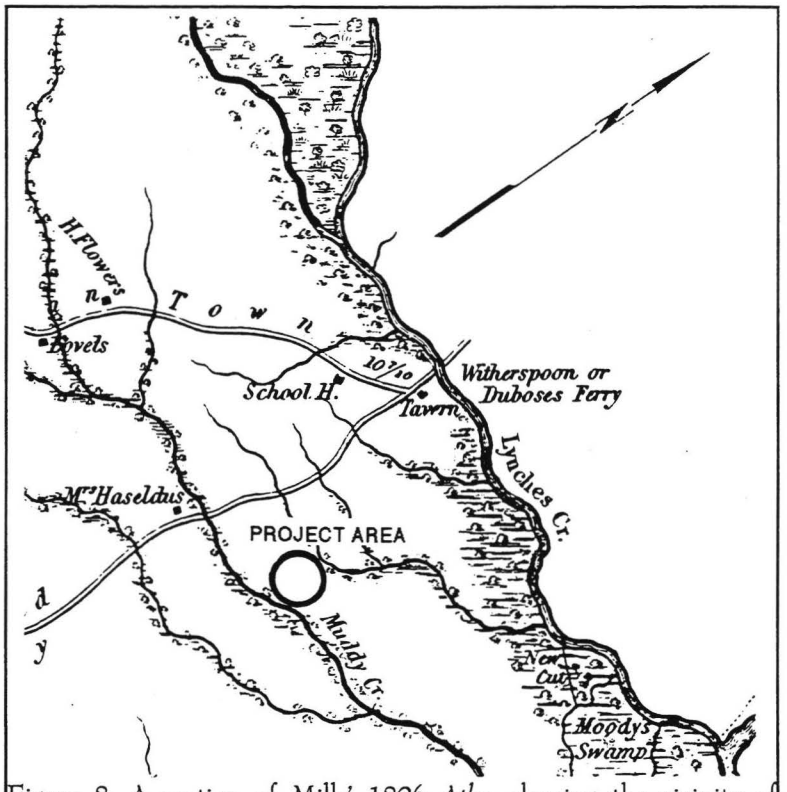


Figure 8. A portion of Mills' 1826 *Atlas* showing the vicinity of the project area.

Williamsburg was the scene of an early British campaign as Lt. Colonel Banastre Tarleton sent troops through the area, "to punish the inhabitants in that quarter for their late breaches of parole and perfidious revolt" (Boddie 1923:101). What Tarleton did not accomplish, Major Wemyess attempted when he crossed the Black River in August 1780 continuing to Kingstree, laying waste to the countryside. He was met by Colonel James and after a short skirmish Wemyess turned toward Georgetown, passing through and burning much of Indiantown (Boddie 1923:104). Only a month later Marion and his troops attacked the British at their outpost on the Black Mingo, routing them and ending the British efforts to establish a chain of forts through the region (Boddie 1923:105-106).

After the American Revolution Williamsburg, like many other areas of South Carolina, lost the revenue of indigo. The once numerous herds cattle had been depleted by either Whigs or Tories. Boddie (1923:134) remarks that some cotton was grown, primarily along the Santee, rice was being tried in the Big Dam Swamp, and that some tobacco was planted. But none could quickly, or effectively, replace the reliance on indigo. By 1788 there were only five buildings in all of Kingstree (Boddie 1923:138).

By the 1790 federal census Williamsburg, which was part of Georgetown District, had a population of about 3,372 whites (39.2% of the population) and 5,228 African American slaves (60.8% of the population), indicating that slavery by this point was firmly entrenched in the area. Moreover, while only about 53% of the families possessed slaves, the average holding was nearly 14 (Boddie 1923:154-170).

The end of the eighteenth century and beginning of the nineteenth century was a time of recovery and relative prosperity for the region. By 1826 Mills commented that cotton was the principal cash crop, although corn, potatoes and peas were also being grown in the district. The slave population had grown to only 5,864, although they accounted for 67.3% of the total population (Mills 1972 [1826]:767). The ferry crossing is still present and by this time is called "Witherspoon or Duboses Ferry." In addition, a tavern is shown east of the intersection of the Indiantown and Post roads. No residences, however, are shown in the immediate vicinity of the ferry or the actual survey area (although we need to remember that Mills' *Atlas* was by subscription and only the subscribers' residences are shown).

The 1830 census reveals that Williamsburg was still a very rural area. There were only a handful of distilleries or sawmills and the most common industry was blacksmiths, with 22 reporting from the district. By 1850 slaves accounted for over 68% of the population and the white population had grown by only about 600 people since 1790. In terms of agricultural production Williamsburg reveals a very modest economy. There were only 454 farms, possessing 70,360 improved acres. Only Kershaw District had fewer farms and the improved acres represented only 14% of the total farm acreage. However, the average farm size was only 1, 107 acres compared to nearby Horry District where the farms had a similar proportion of improved acres, but were more numerous and smaller (about 693 acres). Williamsburg produced only 100 pounds of tobacco, with the great bulk being produced by up country planters. There were only 4,298 bales of cotton produced, ranking the district 23rd (out of 29) in cotton production. It ranked 16th in the production of peas and beans and 11th in production of sweet potatoes — reflecting the continuing importance of subsistence crops in the area's economy.

In 1856 the Northeast Railway was built from Charleston northward through Williamsburg, opening the Charleston markets as they never had been before. Cotton production increased to 6,571 bales — 50% more than 10 years previously. Sweet potato production also increased, with Williamsburg ranked 9th in the state, while the area also increased its rank in rice production from 10th to 7th. McGill also observed that:

> the railroad advantages were so apparent, perhaps more so in the purchase of plantation implements, which eventually shut off many wood and blacksmith shop, once considered a necessity in every neighborhood. . . . Great quantities of beef cattle were shipped down to Charleston, to the great relief of cattle owners, who when driving them down generally lost a few in the Santee Swamp (McGill 1952:272).

The railroad had two other effects. First, trade with nearby Georgetown declined as farmers abandoned it in favor of Charleston. And second, the easy access brought in the turpentine industry, largely from North Carolina. Both Boddie (1923:327) and McGill (1952:266) comment on the industry.

The Civil War did not immediately, or directly, affect Williamsburg. Boddie does note that early in the war a number of slaves were sent to the McClellanville shores to produce salt for Williamsburg County (Boddie 1923:372), but otherwise the war effort consisted of planting subsistence crops.

By May 1865 the citizens of the region requested that Union troops from Georgetown be sent to Williamsburg to keep order and the region came under military rule. Reconstruction had begun. With it so, too, had began efforts by white South Carolinians to force African Americans back into something approach bondage, known as the "Black Codes."

In 1865 the South Carolina legislature passed three laws. The first recognized that slavery no longer existed, but placed stringent economic and social restrictions on former slaves. The second law prohibited black farmers from selling anything without "written permission of the employer or District judge." It prohibited the ownership of weapons, and it allowed any white person to arrest any "person of color" for any misdemeanor. The third law instituted a "sunrise to sunset" workday, placed restrictions on movement, and provided liberal justifications for employee dismissal. In addition, the law stipulated that blacks could only be farm laborers or hired servants, unless they purchased an expensive license from the district court. This in effect closed the door on black economic opportunity. Farm laborers were docked pay for leaving the plantation without permission, damaging the owner's property, showing laziness, and even for being sick. Visitors were not allowed without permission, laborers had to work six days a week, and conversations were often not permitted during work. Workers' children could be removed to other plantations and African Americans could still be beaten for their supposed transgressions. In many parts of the state a pass system similar to slavery was again instituted.

By 1880 the South Carolina legislature had

even further limited black economic opportunities, made oral contracts binding, favored white planters in all disputes, and made the breach of contract a criminal offense equivalent to fraud. Another law allowed plantation owners to hold laborers on the plantation who owed them money.

The "Red Shirt Campaign" by Wade Hampton in 1876 was designed to further erode the few freedoms still held by African Americans. The campaign document directs, in part: "In speeches to negroes you must remember that argument has no effect upon them: they can only be influenced by their fears, superstition and cupidity. Do not attempt to flatter and persuade them. . . . Treat them so as to show them you are the superior race, and that their natural position is that of subordination to the white man."

As elsewhere in South Carolina, Williamsburg's economy was in shambles. Planters in many areas attempted to quickly return to cotton in the hopes of restoring some semblance of wealth and prosperity, but frequently found that the freedmen were little interested in returning to cotton. In the Williamsburg area, it seems that while cotton was important, so too was turpentine. In fact, by the 1880s, one source remarked:

> There is one great evil this country has to contend with, and which accounts for the low price of land, and that is the deposition of the mass of landowners to neglect their farms and to devote all their time and labor to cutting timber and crossties and working turpentine (Anonymous 1884:np).

In fact there were 16 saw mills in Williamsburg County producing $298,815 a year, and 26 turpentine stills producing $420,000 a year. Nevertheless, there were also 1,075 farms in the county. Those owned and operated by whites averaged about 47 acres in size. Those owned by African Americans averaged only 11.7 acres.

By 1900 the number of farms owned and operated by whites had nearly doubled and their acreage had increased to over 95 acres. In that year cotton production was 18,428 bales, ranking Williamsburg 21st out of 40 counties. But Williamsburg ranked sixth in tobacco production, with a yield of 904,330 pounds. While cotton and tobacco accounted for 30.7% and 0.9% of the improved farm acreage respectively, corn was being planted on 48,919 acres, or 36.6% of the improved land in Williamsburg, suggesting that subsistence farming was still vital to the county's economic base.

By 1910 cotton had grown to cover 41.9% of the improved acreage in Williamsburg County, and there were no fewer than 56 gins (Watson 1916:78). In contrast, tobacco had grown to cover 2.5% of the area's acreage. In contrast, corn acreage fell to only 30.6%. The power of cotton, however, was soon broken by the boll weevil and, in 1930, cotton accounted for only 28.9% of the acreage, while tobacco increased to 10.5% of the available acreage. Improved acres themselves had declined from 156,600 acres in 1910 to only 119,350 acres in 1930.

During the Great Depression Williamsburg County began to change. As one account observed:

> many Northerners bought or leased homes in the country; it was a common sight for the Atlantic Coast Line trains to stop in Kingstree and from their pullmans would disembark the wealthy, the powerful, and even national leaders (Anonymous 1976:6).

Many of the once productive plantations were converted into hunting lodges, while others were left to decay.

By 1940, Williamsburg County had drastically curtailed cotton production, and 54.5% of the improved acreage was planted in corn. This echoes the comment of one individual in the Trio area who remarked that one year their gin was worth $100,000 while a year later, with almost no one planting cotton, it wasn't worth a dollar (Pearl Rowell, personal communication 2000).

It was also during this period that another

change became more pronounced. In 1944 74% of Williamsburg County consisted of forests, with about equal amounts of sweet gum in the lowland areas and planted loblolly pines in the upland areas (Penney 1945:21). These pines represented the new crop — timber.

Table 1.
Systems of Tenure

	Share-Cropping	Share Renting	Cash Renting
Landlord furnishes:	land housing fuel tools work stock seed half of fertilizer feed for stock	land housing fuel ¼ or ⅓ fertilizer	land housing fuel
Tenant furnishes:	labor half of fertilizer	labor work stock work stock feed for stock tools seed ¾ or ⅔ fertilizer	labor feed for stock tools seed fertilizer
Landlord receives:	½ of crop	¼ or ⅓ of crop	fixed amount in cash or lint cotton
Tenant receives:	½ of crop	¾ or ⅔ of crop	entire crop less fixed amount

Of course timber was not really a new crop — as implied by the 1884 account of the county, it had been competing with cotton for years. The largest of the lumber concerns was the Atlantic Coast Lumber Company. From their Georgetown base they created a railroad with 217 miles of main track lines and another 70 miles of logging and tram lines. Although begun in 1899, its predecessor was the Georgetown and Lanes Railroad, which was operating by 1881. By the early twentieth century Atlantic Coast Lumber had hit hard times and much of their track was taken over by the Seaboard Air Lines (Fetters 1990:45-54).

In 1921 the Johnsonville area of Williamsburg County, encompassing about 820 square miles joined Florence County. By the late 1920s the boll weevil was reaching Florence County and one newspaper editorial reported that the weevil had "put a stop to the lazy man's crop," and that now planting took "brains, money, hard work, and poison to raise cotton hereabouts these days" (quoted in King 1981:338). Many of those farms attempting to raise cotton were operated by tenants.

In the most simple of terms, two types of tenancy existed in the South — sharecropping and renting. Sharecropping required the tenant to pay the landlord part of the crop produced, while renting required the tenant to pay a fix rent in either crops or money. While similar, there were basic differences, perhaps the most significant of which was that the sharecropper was simply a wage laborer who received his portion of the crop from the plantation owner, while the renter paid his rent to the landlord.

Further distinctions can be made between sharecropping, share-renting, and cash-renting (see Table 1). With sharecropping the tenant supplied the labor and one-half of the necessary fertilizer, while the landlord supplied everything else, including the land, housing, tools, work animals, feed, and seed. At harvest the crop would be divided, usually equally. In share-renting the landlord supplied the land, housing, and either one-quarter or one-third of the fertilizer, while the tenant supplied everything else necessary, including the animals, feed, seed, and tools. At harvest the crop was divided equal to the portion of fertilizer each party provided. Finally, with cash-renting the landlord supplied the land and the housing, while the tenant supplied everything else. The owner received a fixed rent per acre in cash.

Agee et al. provide some general information on agricultural activities during the early twentieth century, observing that:

Farms operated by tenants are

usually devoted mainly to the production of cotton, corn, and tobacco. The ordinary yield of cotton on such farms is a little over one-half bale per acre, while that of corn is about 16 bushels. These yields could easily be increased, as is demonstrated by the better farmers, who obtain 1 bale to 2 bales of cotton and 40 to 60 bushels of corn per acre. . . . About 65 per cent of the farms are operated by tenants. . . . The ordinary yield of tobacco in the county is somewhat over 800 pounds per acre. The price has averaged about 14 cents per pound (Agee et al. 1916:9).

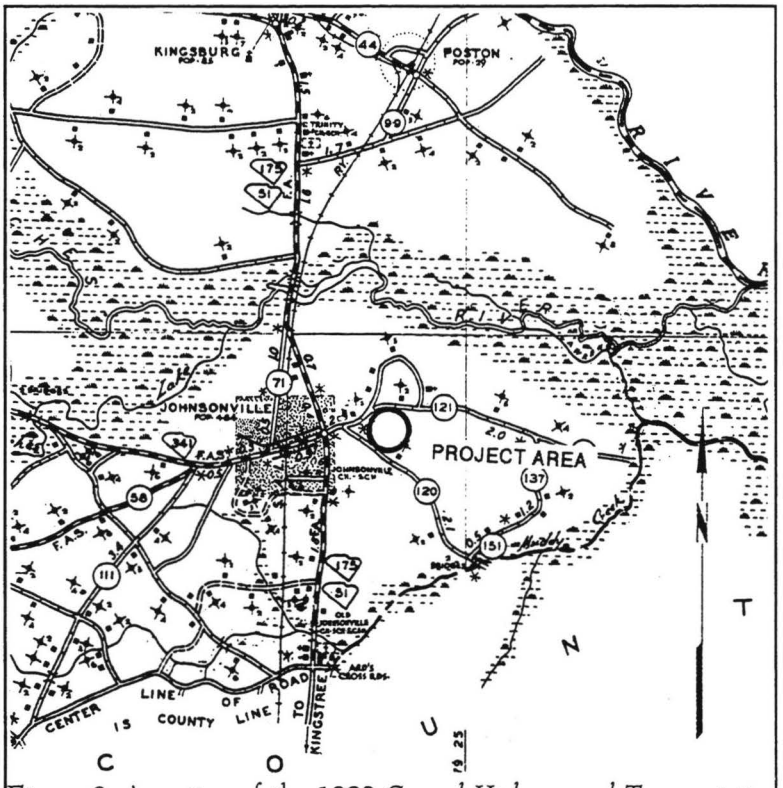


Figure 9. A portion of the 1938 *General Highway and Transportation Map of Florence County* showing the project area.

The 1938 General Highway and Transportation Map for the project area (Figure 9), illustrates development north of the project area. The Post or Stage Road consisted of S-71 on the north side of Johnsonville and S-111 still led to Indiantown. The map also reveals the locations of several farms in the immediate project area even though this area east of Johnsonville did not contain the amount of development as did the area to the north near Kingburg.

METHODS

Field Methods

The initially proposed field techniques involved the placement of shovel tests at 100-foot intervals along transects laid out every 100 feet. All soil would be screened through ¼-inch mesh, with each test numbered sequentially by transect. Each test would measure about 1.0 foot square and would normally be taken to a depth of at least 1.5 foot or until subsoil was encountered. In the areas of standing water, no shovel tests would be excavated. Notes would be maintained for profiles at any sites encountered.

Should sites (defined by the presence of two or more artifacts from either surface survey or shovel tests within a 25 feet area) be identified by shovel testing, further tests would be used to obtain data on site boundaries, artifact quantity and diversity, site integrity, and temporal affiliation. These tests would be placed at 25 feet intervals in a simple cruciform pattern until two consecutive negative shovel tests were encountered. The information required for completion of South Carolina Institute of Archaeology and Anthropology site forms would be collected and photographs would be taken, if warranted in the opinion of the field investigators.

A series of 36 transects were laid out running north and south from Persimmon Ford Road to Possum Fork Road along a South Carolina Public Service Transmission Line (Figure 10). A total of 650 shovel tests were excavated in the project area. Almost all of the shovel tests in the fields revealed soils of Goldsboro loamy sands which have an Ap horizon of dark gray (10YR4/1) loamy sand ranging from 0 to 0.6 foot in depth with an A2 horizon of pale brown (10YR6/3) loamy sand. This generally overlaid a yellowish brown (10YR5/4) sandy clay loam subsoil. This soil is suitable for crops such as cotton and corn which were grown in the area. Most of the shovel tests in the wooded areas produced Chipley loamy sands. These soils have a very dark surface with an A1 horizon of black (N2/0) loamy sand over an AC horizon of grayish brown (2.5Y5/2) loamy sand. The C horizon produced a yellowish brown (10YR5/4) loamy sand to 1.3 feet.

Also found on the tract, but less abundant, were Wehadkee and Johnston Soils which occur in high standing water areas, producing a light brownish gray (10YR6/2) fine sandy loam A1 layer to 0.6 foot over a

Figure 10. Transect lines along powerline corridor.

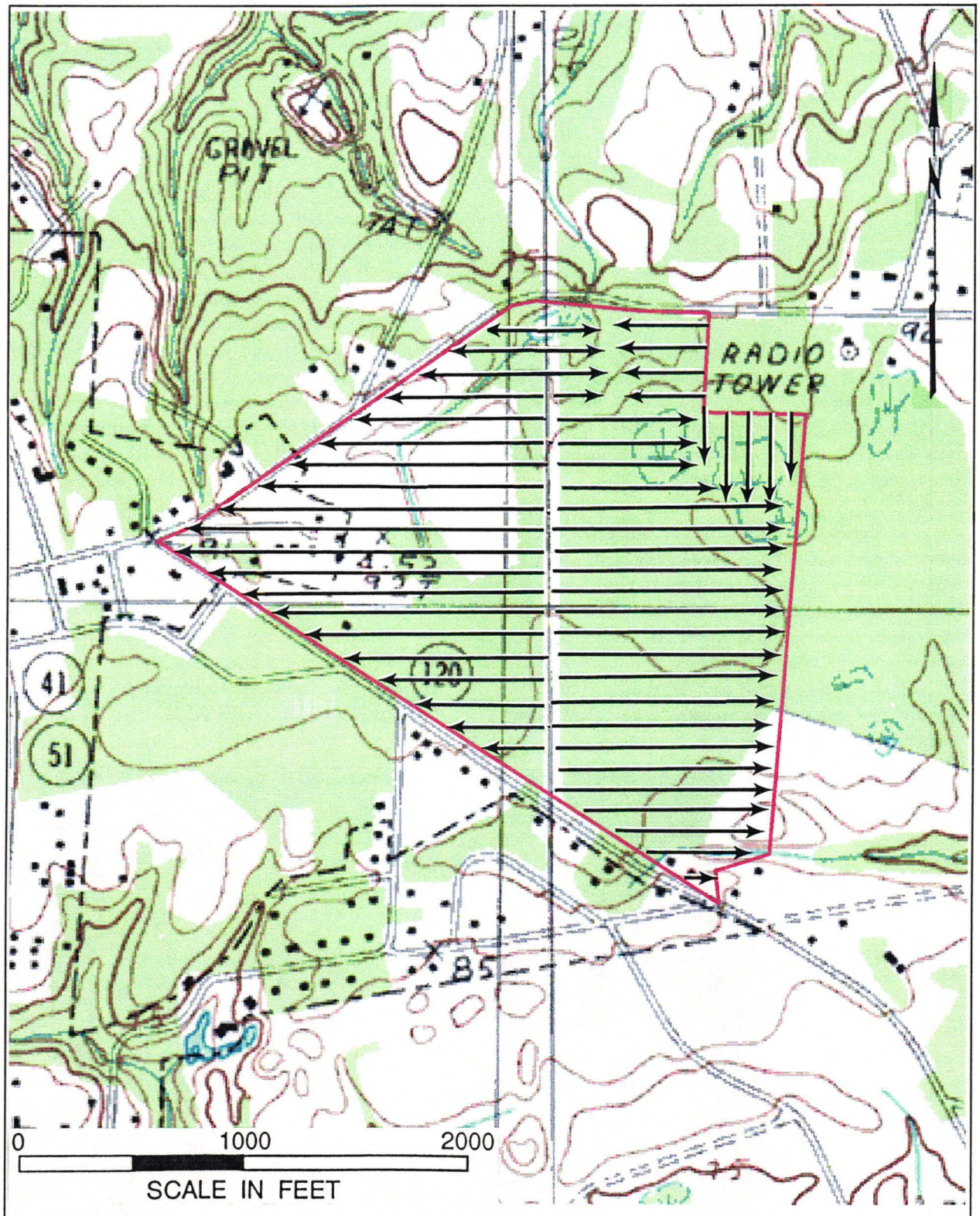


Figure 11. Transects in the survey tract.

gray (10YR6/1) fine sandy loam C1g layer up to a depth of 2.5 feet. The northern end of the tract produced some Wagram sands which have an Ap horizon of grayish brown (2.5Y5/2) sand to 0.6 foot over an A2 horizon of light yellowish brown (2.5Y6/4) fine sand to a depth of 2.2 feet. Lakeland sands were found in the northeastern section of the survey area, closest to where the radio tower was once located. These produce an Ap horizon of very dark grayish brown (10YR3/2) sand to 0.6 foot over a C1 horizon of yellowish brown sand (10YR5/4) to 1.3 feet. Lynchburg sandy loams were the final soil type found on the survey tract. These have an A1 of very dark gray (10YR3/1) sandy loam to 0.4 foot and an A2 horizon of dark grayish brown (10YR4/2) fine sandy loam to 0.8 foot overlying a B1 horizon of pale brown (10YR6/3) fine sandy loam to a depth of 1.3 feet.

The GPS positions were taken with a Garmin GPS 12XL rover and a Garmin 21 Beacon Receiver. The Garmin 12XL tracks up to twelve satellites, each with a separate channel that is continuously being read. The benefit of parallel channel receivers is their improved sensitivity and ability to obtain and hold a satellite lock in difficult situations, such as in forests or urban environments where signal obstruction is a frequent problem. This was a vital consideration for the study area.

GPS accuracy is generally affected by a number of sources of potential error, including errors with satellite clocks, multipathing, and selective availability. Satellite clock errors can occur when the satellites's clock is off by a little as a millisecond, or when a slightly-askew orbit results in a distance error. Multipathing occurs when the signal bounces off trees, chain-link fences, or bodies of water. Multipathing was probably not a significant source of error for this study since the site area was cleared and our reading was taken in the center of the site. The source of most extreme GPS errors is selective availability (SA), the deliberate mistiming of satellite signals by the Department of Defense. This degradation results in horizontal errors of up to 100 m 95% of the time, although the error may be as much as 300 m. Nevertheless, selective availability has been turned off by the DOD. We have previously determined the 3D[1] and DGPS readings with the Garmin 12XL were identical. Therefore, we relied on 3D navigation mode, with expected potential horizontal errors of 6 m or less.

Architectural Survey

As previously discussed, we elected to use a 1.0 mile area of potential effect (APE). The architectural survey would record buildings, sites, structures, and objects which appeared to have been constructed before 1950 and which retained their integrity. Those which have undergone such extensive modifications to preclude their eligibility were not recorded.

For each identified resource an architectural survey form would be completed and at least two representative photographs would be taken. Permanent control numbers would be assigned by the S.C. Department of Archives and History at the conclusion of the study. The site forms for the resources identified during this study would then be submitted with this study for eventual submission to the South Carolina State Historic Preservation Office by our client.

The survey was conducted by driving the public roads (typically county or state secondary roads) in the APE. As was previously discussed, there were 14 sites previously recorded in the APE as a result of a reconnaissance architectural survey by the S.C. Department of Archives and History in 1985. No site forms or other data, beyond a map, were identified for this reconnaissance study. Individual sites were identified only by dots on a map (see Figure 12).

Site Evaluation

Sites will be evaluated for further work based on the eligibility criteria for the National Register of Historic Places. Chicora Foundation only provides an opinion of National Register eligibility and the final

[1]A basis requirement for GPS position accuracy is having a lock on at least four satellites, which places the receiver in 3D mode. This is critical – as an example, positions calculated with less than four satellites can have horizontal errors in excess of a mile, or over 1,600 m.

determination is made by the State Historic Preservation Officer at the South Carolina Department of Archives and History.

The criteria for eligibility to the National Register of Historic Places is described by 36CFR60.4, which states:

> the quality of significance in American history, architecture, archaeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location,
> design, setting, materials, workmanship, feeling, and association, and
>
> a. that are associated with events that have made a significant contribution to the broad patterns of our history; or
>
> b. that are associated with the lives of persons significant in our past; or
>
> c. that embody the distinctive characteristics of a type, period, or method of construction or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
>
> d. that have yielded, or may be likely to yield, information important in prehistory or history.

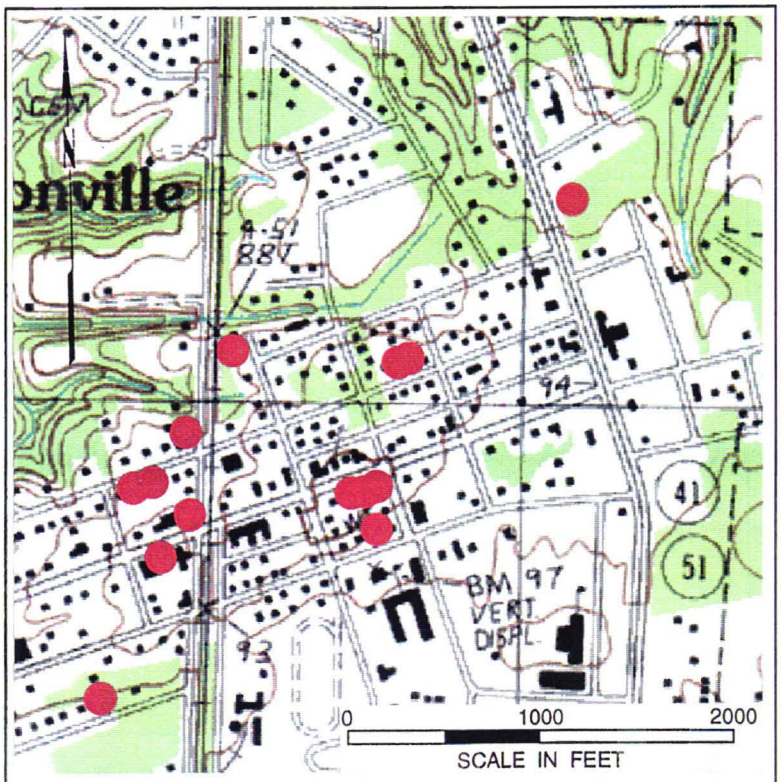


Figure 12. Architectural sites identified during the 1985 reconnaissance study by the S.C. Department of Archives and History.

National Register Bulletin 36 (Townsend et al. 1993) provides an evaluative process that contains five steps for forming a clearly defined explicit rationale for either the site's eligibility or lack of eligibility. Briefly, these steps are:

- identification of the site's data sets or categories of archaeological information such as ceramics, lithics, subsistence remains, architectural remains, or sub-surface features;
- identification of the historic context applicable to the site, providing a framework for the evaluative process;
- identification of the important research questions the site might be able to address, given the data sets and the context;
- evaluation of the site's archaeological integrity to ensure that the data sets were sufficiently well preserved to address the research

questions; and

- identification of important research questions among all of those which might be asked and answered at the site.

This approach, of course, has been developed for use documenting eligibility of sites being actually nominated to the National Register of Historic Places where the evaluative process must stand alone, with relatively little reference to other documentation and where typically only one site is being considered.

Laboratory Analysis

The cleaning and analysis of artifacts was conducted in Columbia at the Chicora Foundation laboratories. These materials have been catalogued and accessioned for curation at the South Carolina Institute of Archaeology and Anthropology, the closest regional repository. The site form for the identified archaeological site (38FL382) has been filed with the South Carolina Institute of Archaeology and Anthropology. Field notes have been prepared for curation using archival standards and will be transferred to the South Carolina Institute of Archaeology and Anthropology as soon as the project is complete.

Analysis of the collections followed professionally accepted standards with a level of intensity suitable to the quantity and quality of the remains. In general, the temporal, cultural, and typological classifications of historic remains follow such authors as Price (1970) and South (1977).

RESULTS

Introduction

The intensive shovel testing at the 150 acre tract identified one historic archaeological site, 38FL382 (Figure 13). The site consists of a twentieth century domestic and agricultural site. It is recommended not eligible for inclusion on the National Register of Historic Places. No additional management activities are recommended for this find.

Of the previously recorded 14 architectural sites, eight were found to have been substantially altered or demolished. The remaining six were worthy of recordation (Figure 13), although none are recommended eligible for inclusion on the National Register. All of the sites are at least 2,000 feet from the western edge of the proposed industrial park and it is unlikely that any will be affected by the proposed undertaking.

Identified Archaeological Site

38FL382

Site 38FL382 (Figure 14) is a twentieth century surface and subsurface scatter of domestic and agricultural artifacts. It is situated in the western portion of the 149 acre survey tract about 300 feet north of Persimmon Ford Road at an elevation of almost 90 feet AMSL. The topography in the immediate area is fairly level with slopes at 0-6%.

Site 38FL382 is accessible from a trail approximately 500 feet east on Persimmon Ford Road. A central GPS UTM (NAD 27 datum) revealed a coordinate of 644612E 3743083N.

The site was first encountered during walking between shovel tests. As additional pedestrian survey was conducted, it became clear that there were a number of clearly identifiable features associated with this site, including a dilapidated and partially collapsed hog pen and shed at the western edge of the site, a square brick foundation (with modern brick and hard portland cement mortar), an additional pile of brick rubble, a square concrete pad, two large brick piers, a feeding trough, and various piles of modern debris and trash, as well as several abandoned pieces of farm equipment.

This scatter of buildings is shown on the modern USGS topographic map and no farm unit is shown on the earlier county highway map. A QORE Property Sciences assessment reports that a resident in the area associated the cement slab with a small auto repair garage which operated about 10 years ago, although another resident does not recall any such structure (QORE 2000). While an old car located in the site area may support this claim, it seems more likely that this represents a small farm unit with the debris naturally accruing around such an operation.

The site is situated mostly in an area of dense pine and hardwoods mixed with thick underbrush — all second growth which has taken over the abandoned work area. Surface visibility was poor (1-25%) in the woods, but artifacts were found on the surface on the edge of the woods and in the adjacent field. Based primarily on the surface distribution of remains and cultural features, the site boundaries have been fixed at about 525 feet east-west by about 225 feet north-south.

Transect 17W bisected the east and Shovel Tests 13 and 14 on the transect were positive. Additional shovel tests excavated on the cardinal directions around these tests were negative. Some modern (i.e., aluminum and plastic) was encountered in the vicinity of the tests north of Shovel Test 13, but these remains were not retained.

Because of the brick foundation and surface scatters at the western end of the site, an additional 14 shovel tests were excavated in this area; two of these tests were positive with materials found either in the brick foundation or immediately southeast of it.

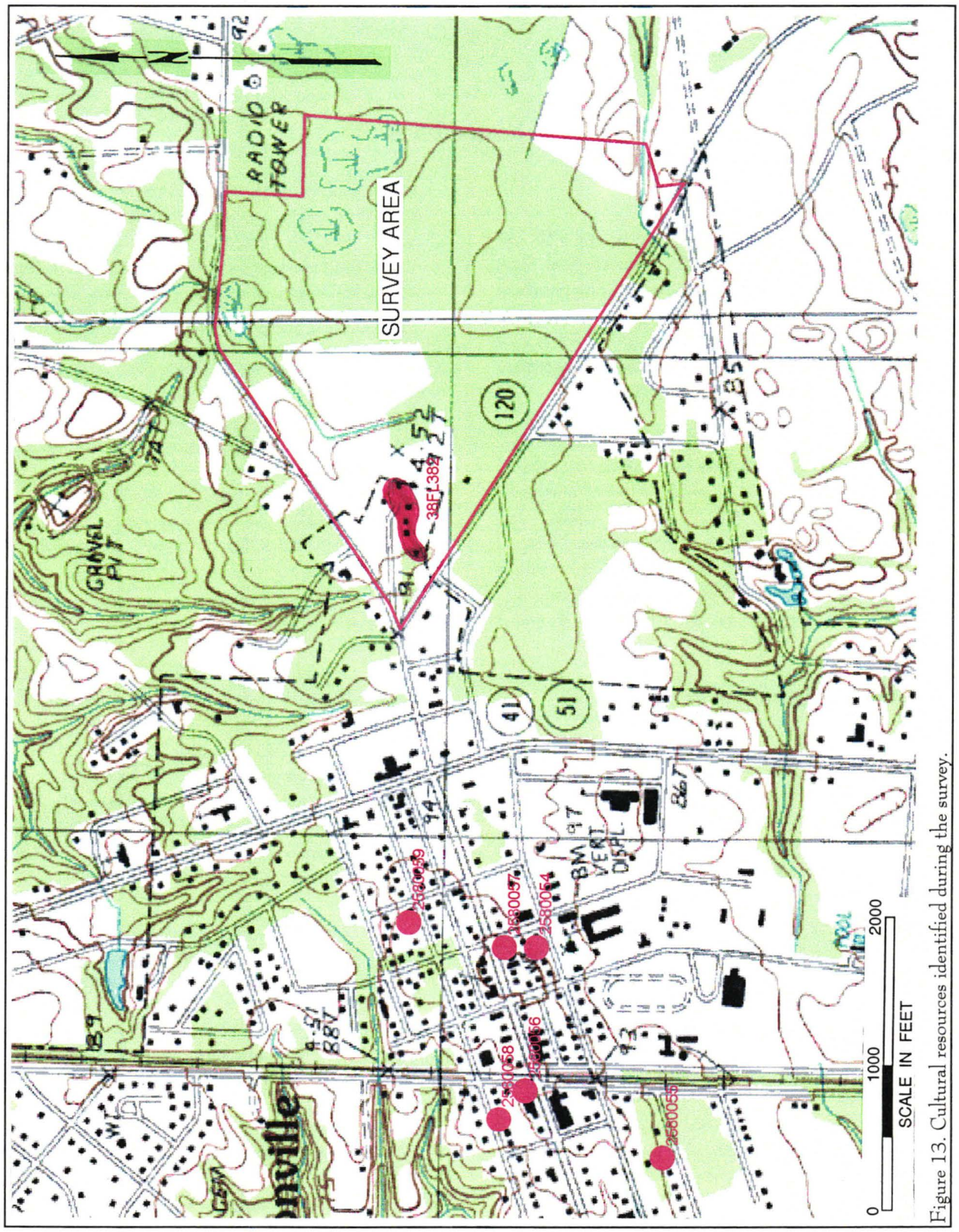


Figure 13. Cultural resources identified during the survey.

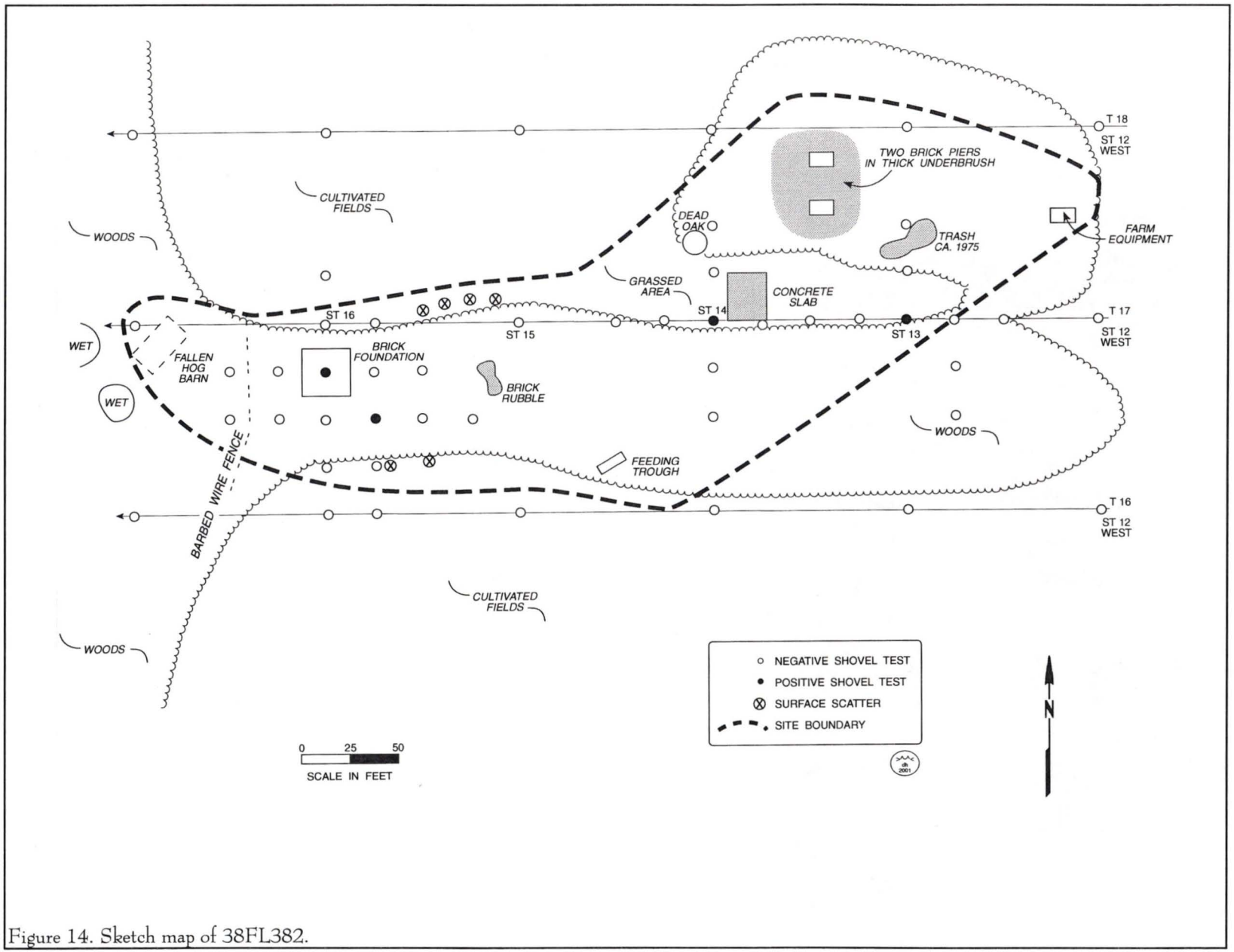


Figure 14. Sketch map of 38FL382.

Figure 15. View of concrete slab and surrounding tin roofing at 38FL382.

Each shovel test produced soil consistent with Goldsboro loamy sands, exhibiting an Ap layer of dark gray (10YR4/1) loamy sand to 0.6 foot over a pale brown (10YR6/3) loamy sand (Pitts 1974). Shovel tests excavated to depths of up to 2.0 feet. All of the remains were identified in the upper, or plowzone, region of the test.

Transect 17W, Shovel Test 13 yielded four machine cut nails, one undecorated whiteware ceramic, and one aqua glass fragment. Shovel Test 14 from this same transect produced six fragments of modern safety glass, perhaps broken windshield glass.

The shovel test 25 feet of Test 16, also on Transect 17W, yielded three wire nails, one UID metal, and one fragment of brown container glass. The shovel test ca. 53 feet southeast of Shovel Test 16 produced four wire nails.

The surface collection yielded nine undecorated whiteware ceramics, one decalcomania whiteware, three milk glass fragments, one clear container glass, and two melted glass fragments.

These remains are consistent with a very late nineteenth century through late twentieth century site. The dominance of wire nails, the prevalence of clear glass and absence of manganese glass, the presence of the decalcomania (indicating a post-1901 date of deposition), and the presence of safety glass indicates a post-1926 deposition (Robertson 1974: 239).

This cluster of farm units are shown on the modern USGS topographic map, indicating that they were present until very recently. In addition, they are shown on the 1941 aerial photograph of the project area (PC 2B 213).

The National Register potential of 38FL382 is contingent on several factors such as the data sets present, site integrity, and the ability to address significant research questions. This site has produced varied data sets — ceramics, glass, nails, foundations, trash piles, brick scatters, and other features associated with farming practice. Nevertheless, the data sets are very recent, likely having been present and actively used or added to as recently as the past decade. In addition, their context is, at present, uncertain. It is not clear whether these represent a combination of farm activities and auto repair, whether they also include domestic activities, or whether they only represent secondary discard piles from elsewhere.

Nor do we believe that the site could address significant archaeological research questions. In fact, it is likely that oral history might be better able to address broad, or generic questions, such as site function, than archaeological research.

Consequently, we recommend the site as not eligible, pending the review and concurrence of the State Historic Preservation Office. No additional

Figure 16. Hipped roof structure with two front gables (2580059).

management activities are recommended for this site.

Historic and Architectural Resources

The 1985 reconnaissance survey by staff of the S.C. Department of Archives and History identified 14 structures, which were highlighted on a map (see Figure 13). No photographs were taken and no site forms were prepared. Using the map in the files, it was possible to determine that three represented downtown commercial structures, one represented a mill building, and the remaining 10 were all single dwellings.

Although these 14 structures were the focus of this current study, the roads around Johnsonville were again driven to see if any structures might have been missed. No new buildings were encountered and, in fact, we discovered that one residence was demolished, the mill was in ruins, one commercial building was dilapidated and heavily altered, and five single dwellings had been so altered in the intervening 15 years that they were no longer considered worthy of recordation. That left six structures — two commercial buildings and four single dwellings.

The single dwellings are fairly eclectic, including one massed plan under a hipped roof (2580059), two gable front and wing structures (2580054 and 2580058), and one massed plan folk house with a gable (end-to-front) roof (2580055). Alterations vary by structure, with the massed plan with hipped roof exhibiting rather minor alterations, while one of the gable front and wing structures has had extensive modifications. Nevertheless, none of the structures appear sufficiently intact, or noteworthy, to be recommended eligible for inclusion on the National Register.

The commercial buildings include a one-part commercial block in the downtown core with a canted bay, now occupied by the AFL-CIO (2580056).

Figure 17. One part commercial block with canted bay (2580056).

Unfortunately, this structure has been extensively modified and can no longer be considered to possess the integrity necessary for National Register eligibility. The other commercial building is a Masonic Lodge (2580057). This two-part commercial block is two stories of brick construction. While not extensively modified, it is of ordinary construction and not recommended eligible.

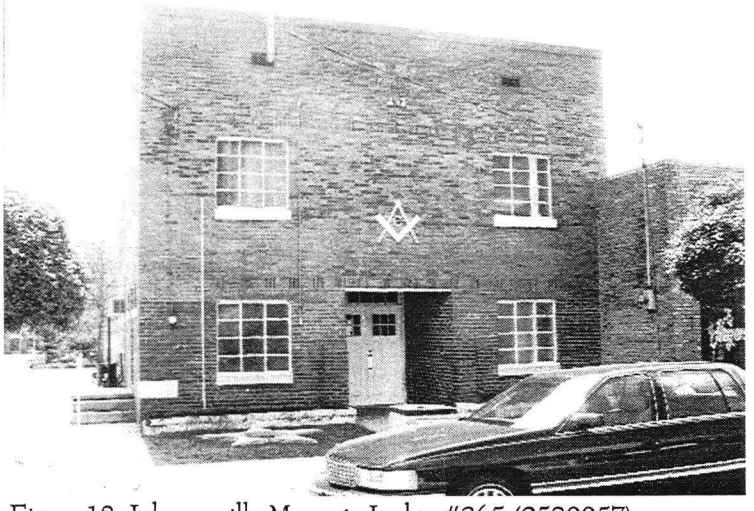


Figure 18. Johnsonville Masonic Lodge #365 (2580057).

All of these structures are, at a minimum, about 0.4 mile west of the proposed industrial park. It is unlikely that the park will have any dramatic visual effect on any of these structures.

SUMMARY AND RECOMMENDATIONS

This study involved the examination of a 150 acre tract situated in southeastern Florence County, South Carolina. The tract is proposed to be used by Florence County to construct an industrial park. This report, conducted for Hayes, Seay, Mattern & Mattern (HSMM), provides the results of that investigation and is intended to examine the archaeological sites found on the proposed tract, as well as historic sites which are within a 1.0 mile area of potential effects (APE). This report is intended to assist HSMM and its client (Florence County) comply with their historic preservation responsibilities.

The proposed work will result in extensive clearing, grubbing, grading, as well as construction activities. It is likely to destroy any archaeological sites which may be present on the survey tract. The work may also modify the visual surroundings of any historic properties in the immediate vicinity.

The surrounding areas are still fairly rural with a handful of houses in direct view of the project area, and one modern house directly on the survey tract. The survey tract itself is mostly dense woods in three-fourths of the tract area, and wetlands, located in the northeast and southwest portion of the survey tract, but has an area of fallow fields in the western portion of the area. Shovel tests were conducted at 100 foot intervals on transects spaced 100 feet apart. Some areas were not tested using shovel tests due to standing water, but instead were surveyed using a pedestrian walk over. Areas of wet soils (but without standing water) were shovel testing as well as possible with the mud searched through for any evidence of archaeological or historical remains. A total of 650 shovel tests were excavated during this survey, not including close interval testing.

As a result of this investigation, one archaeological site was identified within the study tract. Site 38FL382 represents the remains of what may be a twentieth century domestic and agricultural site. Remaining features include a brick foundation, hog pen or barn, a cement foundation slab, and brick pillars. Shovel testing revealed limited data sets, offering only nails, glass, and whiteware. Modern trash has affected the integrity of the site and it is not possible to determine which remains may represent secondary deposits. The site, present by the early 1940s, remained intact until the late 1990s. We recommend the site not eligible for inclusion on the National Register and recommend no additional management activities, pending the review and concurrence of the State Historic Preservation Office.

In addition to the archaeological investigations, a survey of historic sites was also conducted within the 1.0 mile APE. A previous S.C. Department of Archives and History reconnaissance survey, conducted in 1985, revealed 14 structures potentially worthy of recordation and assessment. We found that of these 14, one residence was demolished, a steam powered cotton press mill was in ruins, one commercial building was dilapidated and heavily altered, and five single dwellings had been so altered in the intervening 15 years that they were no longer considered worthy of recordation. That left six structures (sites 2580054 through 2580059) — two commercial buildings and four single dwellings to be included in this study.

We do not believe that any of the remaining six structures possess sufficient integrity to warrant National Register eligibility. The rather low incidence of historic structures in this rural section of South Carolina may seem unusual, but it is directly associated with the history of the community. The WPA Writers' Program noted that:

> Though an old established crossroads settlement, Johnsonville . . . was laid out and sold in town lots not long before the World War. Its nickname is "Ashboro," because everything in town except the artesian well is said

> to have burned at one time or another (WPA Writers' Program 1941:463).

As a result, few of the structures are very old. This, coupled with the growth and prosperity brought by Wellman, the town's primary industry, has resulted in much development and little preservation.

It is possible that archaeological remains may be encountered in the area during mining activities. As always, the utility's contractors should be advised to report any discoveries of concentrations of artifacts (such as bottles, ceramics, or projectile points) or brick rubble to the project engineer, who should in turn report the material to the State Historic Preservation Office, or Chicora Foundation (the process of dealing with late discoveries is discussed in 36CFR800.13(b)(3)). No further land altering activities should take place in the vicinity of these discoveries until they have been examined by an archaeologist and, if necessary, have been processed according to 36CFR800.13(b)(3).

SOURCES CITED

Abbott, Lawrence E., Jr., John S. Cable, Mary Beth Reed, and Erica E. Sanborn

1995 *An Archaeological Survey and Testing of the McLean-Thompson Property Land Aquisition, and the Ambulatory Health Care Clinic Project, Fort Bragg, Cumberland County, North Carolina.* Technical Report 349. New South Associates, Stone Mountain, Georgia.

Agee, J.H., J.A. Kerr, and W.E. McLendon

1916 *Soil Survey of Florence County, South Carolina.* U.S.D.A., Bureau of Soils, Washington, D.C.

Anderson, David G.

1979 *Excavations at Four Fall Line Sites: The Southeastern Beltway Project.* Commonwealth Associates, Inc., Jacksonville, Michigan. Submitted to the South Carolina Department of Highways and Public Transportation, Columbia.

1992a A History of Paleoindian and Early Archaic Research in the South Carolina Area. In *Paleoindian and Early Archaic Period Research in the Lower Southeast: A South Carolina Perspective*, edited by David G. Anderson, Kenneth E. Sassaman, and Christopher Judge, pp. 7-18. Council of South Carolina Professional Archaeologists, Columbia.

1992b Models of Paleoindian and Early Archaic Settlement in the Lower Southeast. In *Paleoindian and Early Archaic Period Research in the Lower Southeast: A South Carolina Perspective*, edited by David G. Anderson, Kenneth E. Sassaman, and Christopher Judge, pp. 28-47. Council of South Carolina Professional Archaeologists, Columbia.

Anderson, David G., Charles E. Cantley, and A. Lee Novick

1982 *The Mattassee Lake Sites: Archaeological Investigations Along the Lower Santee River in the Coastal Plain of South Carolina.* Commonwealth Associates, Jackson, Michigan.

Anderson, David G., Kenneth E. Sassaman, and Christopher Judge

1992 *Paleoindian and Early Archaic Period Research in the Lower Southeast: A South Carolina Perspective.* Council of South Carolina Professional Archaeologists, Columbia.

Anonymous

1884 *South Carolina in 1884: A View of the Industrial Life of the State.* The News and Courier, Charleston, South Carolina.

1976 *The Waccamaw Region Historic Preservation Plan.* Waccamaw Regional Planning and Development Council, Georgetown, South Carolina.

Barry, John M.

1980 *Natural Vegetation of South Carolina.* University of South Carolina Press, Columbia.

Bense, Judith A.
1994 *Archaeology of the Southeastern United States: Paleoindian to World War I*. Academic Press, New York.

Blanton, Dennis B., Christopher T. Espenshade, and Paul E. Brockington, Jr.
1986 *An Archaeological Study of 38SU83: A Yadkin Phase Site in the Upper Coastal Plain of South Carolina*. Garrow and Associates, Atlanta.

Boddie, William Willis
1923 *History of Williamsburg County*. The State Company, Columbia.

Cable, John S.
1982 Differences in Lithic Assemblages of Forager and Collector Strategies. In *Archaeological Survey and Reconnaissance Within the Ten-Year Floodpool Harry S. Truman Dam and Reservoir*, edited by Richard Taylor. Report submitted to the U.S. Army Corps of Engineers, Kansas City District.

1991 *Archaeological Test Excavations on the Northeastern Perimeter of the Buck Hall Site (38CH644), Francis Marion National Forest, South Carolina*. New South Associates, Irmo, South Carolina.

Chapman, Jefferson
1977 *Archaic Period Research in the Lower Little Tennessee River Valley, 1975: Icehouse Bottom, Harrison Branch, Thirty Acre Island, Calloway Island*. Report of Investigations 18. University of Tennessee, Knoxville.

1985a Archaeology and the Archaic Period in the Southern Ridge-an-Valley Province. In *Structure and Process in Southeastern Archaeology*, edited by Roy S. Dickens and H. Trawick Ward, pp. 137-179. The University of Alabama Press, University.

1985b *Tellico Archaeology: 12,000 Years of Native American History*. Reports of Investigations 43, Occasional Paper 5, University of Tennessee, Knoxville.

Charles, Tommy and James L. Michie
1992 South Carolina Paleo Point Data. In *Paleoindian and Early Archaic Period Research in the Lower Southeast: A South Carolina Perspective*, edited by David G. Anderson, Kenneth E. Sassaman, and Christopher Judge, pp. 242-247. Council of South Carolina Professional Archaeologists, Columbia.

Coe, Joffre
1952 The Cultural Sequence of the Carolina Piedmont. In *Archaeology of the Eastern United States*, edited by J.B. Griffin, pp. 301-311. University of Chicago Press, Chicago.

1964 *The Formative Cultures of the Carolina Piedmont*. Transactions of the American Philosophical Society 54(5).

Daniel, I. Randolph, Jr.
1992 Early Archaic Settlement in the Southeast: A North Carolina Perspective. In *Paleoindian and Early Archaic Period Research in the Lower Southeast: A South Carolina Perspective*, edited by David G. Anderson, Kenneth E. Sassaman, and Christopher Judge, pp. 68-77. Council of South Carolina Professional Archaeologists, Columbia.

Derting, Keith M., Sharon L. Pekrul, and Charles J. Rinehart
1991 *A Comprehensive Bibliography of*

South Carolina Archaeology. Research Manuscript Series 211. S.C. Institute of Archaeology and Anthropology, University of South Carolina, Columbia.

Ferguson, Leland G.
1971 *South Appalachian Mississippian*. Ph.D. dissertation, University of North Carolina, Chapel Hill. University Microfilms, Ann Arbor, Michigan.

Fetters, Thomas
1990 *Logging Railroads of South Carolina*. Heimburger House Publishing, Forest Park, Illinois.

Goodyear, Albert C., III and Glen T. Hanson
1989 *Studies in South Carolina Archaeology: Essays in Honor of Robert L. Stephenson*. Anthropological Studies 9. South Carolina Institute of Archaeology and Anthropology, University of South Carolina, Columbia.

Goodyear, Albert C., John H. House, and Neal W. Ackerly
1979 *Laurens-Anderson: An Archaeological Study of the Inter-Riverine Piedmont*. Anthropological Studies 4, Occasional Papers of the Institute of Archaeology and Anthropology, University of South Carolina, Columbia.

Gunn, Joel D. and Kathy Wilson
1993 *Archaeological Data Recovery Investigations at Sites 38CT54 and 38CT58 Along the S.C. 151 Jefferson Bypass, Chesterfield County, South Carolina*. Garrow and Associates, Raleigh. Submitted to the S.C. Department of Highways and Public Transportation, Columbia.

King, G. Wayne
1981 *Rise Up So Early: A History of Florence County, South Carolina*. The Reprint Press, Spartanburg, South Carolina.

Mathew, William M, editor
1992 *Agriculture, Geology, and Society in Antebellum South Carolina: The Private Diary of Edmund Ruffin, 1843*. University of Georgia Press, Athens.

McGill, Samuel D.
1952 *Narrative of Reminiscences in Williamsburg County*. Kingstree Lithographic Company, Kingstree, South Carolina.

Michie, James L.
1977 *The Late Pleistocene Human Occupation of South Carolina*. Unpublished Honor's Thesis, Department of Anthropology, University of South Carolina, Columbia.

Mills, Robert
1972 [1826] *Statistics of South Carolina*. Hurlbut and Lloyd, Charleston, South Carolina. 1972 facsimile ed. The Reprint Company, Spartanburg, South Carolina.

NOAA
1977 National Oceanic and Atmospheric Administration Environmental Data Service. Washington, D.C.

Oliver, Billy L.
1981 *The Piedmont Tradition: Refinement of the Savannah River Stemmed Point Type*. Unpublished Master's Thesis, Department of Anthropology, University of North Carolina, Chapel Hill.

1985 Tradition and Typology: Basic

Elements of the Carolina Projectile Point Sequence. In *Structure and Process in Southeastern Archaeology*, edited by Roy S. Dickens and H. Trawick Ward, pp. 195-211. The University of Alabama Press, University.

Park, A.D.
1980 *The Ground Water Resources of Sumter and Florence Counties, South Carolina*. Report Number 133, South Carolina Water Resources Commission, Columbia.

Penney, James T.
1945 Natural Resources. In *South Carolina: Economic and Social Conditions in 1944*, edited by W.H. Callcott, pp. 1-27. University of South Carolina, Columbia.

Phelps, David S.
1983 Archaeology of the North Carolina Coast and Coastal Plain: Problems and Hypotheses. In *The Prehistory of North Carolina: An Archaeological Symposium*, edited by Mark A. Mathis and Jeffrey J. Crow, pp. 1-52. North Carolina Division of Archives and History, Department of Cultural Resources, Raleigh.

Pitts, J.J.
1974 *Soil Survey of Florence and Sumter Counties, South Carolina*. United States Department of Agriculture, Washington, D.C.

Price, Cynthia
1979 *19th Century Ceramics in the Eastern Ozark Boarder Region*. Monograph Series 1. Center for Archaeological Research, Southwest Missouri University, Springfield.

QORE Property Sciences
2000 *Report of Phase I Environmental Site Assessment. Proposed Industrial Park Site Possum Fork Road at Persimmon Ford Road Johnsonville, Florence County, South Carolina*. QORE Job No. F-1481. Greenville, South Carolina.

Richards, Horace G.
1959 Geology of the Coastal Plain of North Carolina. *Transactions of the American Philosophical Society* 40(1). Philadelphia.

Robertson, Patrick
1974 *The Book of Firsts*. Clarkson N. Potter, New York.

Ryan, Thomas M.
1972 *Archaeological Survey of the Columbia Zoological Park, Richland and Lexington Counties, South Carolina*. Research Manuscript Series 37. South Carolina Institute of Archaeology and Anthropology, University of South Carolina, Columbia.

Sassaman, Kenneth E.
1983 *Middle and Late Archaic Settlement in the South Carolina Piedmont*. Unpublished master's thesis. Department of Anthropology, University of South Carolina, Columbia.

1993 *Early Woodland Settlement in the Aiken Plateau: Archaeological Investigations at 38AK157, Savannah River Site, Aiken County, South Carolina*. Savannah River Archaeological Research Papers 3. South Carolina Institute of Archaeology and Anthropology, University of South Carolina, Columbia.

1995 The Cultural Diversity of Interactions Among Mid-Holocene

Societies of the American Southeast. In *Native American Interactions: Multiscalar Analyses and Interpretation in the Eastern Woodlands,* edited by Machael Nassaney and Kenneth E. Sassaman, pp. 174-204. University of Tennessee Press, Knoxville.

Sassaman, Kenneth E. and David G. Anderson

1990 Typology and Chronology. In *Native American Prehistory of the Middle Savannah River Valley,* edited by Kenneth E. Sassaman, Mark J. Brooks, Glen T. Hanson, and David G. Anderson, pp. 143-216. Savannah River Archaeological Research Publication 1. South Carolina Institute of Archaeology and Anthropology, University of South Carolina, Columbia.

1994 *Middle and Late Archaic Archaeological Records of South Carolina: A Synthesis for Research and Resource Management*. Council of South Carolina Professional Archaeologists, Columbia.

Sassaman, Kenneth E., Mark J. Brooks, Glen T. Hanson, and David G. Anderson

1990 *Native American Prehistory of the Middle Savannah River Valley*. Savannah River Archaeological Research Papers 1. South Carolina Institute of Archaeology and Anthropology, University of South Carolina, Columbia.

Sharrer, G. Terry

1971 Indigo in Carolina, 1671-1796. *South Carolina Historical Magazine* 72:94-103.

South, Stanley A.

1959 *A Study of the Prehistory of the Roanoke Rapids Basin*. Master's thesis, Department of Sociology and Anthropology, University of North Carolina, Chapel Hill.

1977 *Method and Theory in Historical Archaeology*. Academic Press, New York.

Starr, Rebecca

1984 *A Place Called Daufuskie: Island Bridge to Georgia, 1520-1830*. Unpublished M.A. Thesis, Department of History, University of South Carolina, Columbia.

Taylor, Richard L.

1984 *Cultural Resources Survey of the Proposed Pee Dee Electric Generating Facility, Florence County, South Carolina*. Commonwealth Associates, Inc., Jackson, Michigan.

Townsend, Jan, John H. Sprinkle, Jr., and John Knoerl

1993 *Guidelines for Evaluating and Registering Historical Archaeological Sites and Districts*. Bulletin 36. National Park Service, National Register of Historic Places, Washington, D.C.

Trinkley, Michael

1976 *A Typology of Thom's Creek Pottery from the South Carolina Coast*. Unpublished Master's thesis. Department of Anthropology, University of North Carolina, Chapel Hill.

1980 *Additional Investigations at Site 38LX5*. South Carolina Department of Highways and Public Transportation, Columbia.

1982 *Archaeological Investigation of the Pageland By-Pass Borrow Pit, Chesterfield County*. South Carolina Department of Highways and Public Transportation, Columbia.

1990 *An Archaeological Context for the South Carolina Woodland Period.* Chicora Foundation Research Series 22. Chicora Foundation, Inc., Columbia, S.C.

Trinkley, Michael, Debi Hacker, and Natalie Adams
1993 *Life in the Pee Dee: Prehistoric and Historic Research on the Roche Carolina Tract, Florence County, South Carolina*. Research Series 39. Chicora Foundation, Inc., Columbia.

Wallace, David D.
1951 *South Carolina: A Short History, 1520 - 1948*. University of South Carolina Press, Columbia

Walthall, John A.
1980 *Prehistoric Indians of the Southeast: Archaeology of Alabama*. University of Alabama Press, University.

Ward, Trawick
1978 *The Archaeology of Whites Creek, Marlboro County, S.C.* Research Laboratories of Anthropology, University of North Carolina, Chapel Hill.

1983 Whites Creek: The Second Time Around. *South Carolina Antiquities* 15:63-65.

Waring, Antonio J., Jr.
1968 The Refuge Site, Jasper County, South Carolina. In *The Waring Papers: The Collected Works of Antonio J. Waring, Jr.*, edited by Stephen B. Williams, pp. 198-208. Papers of the Peabody Museum of Archaeology and Ethnology 58.

Watson, E.J.
1916 *Twelfth Annual Report of the Commissioner of Agriculture, Commerce and Industries of the State of South Carolina*. Gonzales and Bryan, Columbia.

Wendel, C.H.
1997 *Encyclopedia of American Farm Implements and Antiques*. Krause Publications, Wisconsin.

Williams, Stephen B.
1965 The Paleoindian era: Proceedings of the 20th Southeastern Archaeological Conference. *Southeastern Archaeological Conference Bulletin* 2.

WPA Writers' Program
1941 *South Carolina: The WPA Guide to the Palmetto State*. Oxford University Press, New York.